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The Department of Defense Small Business Innovation Research and Small Business Technology Transfer Programs: Implementation of the Commercialization Pilot Program and Related Reforms

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13. ABSTRACT (maximum 200 words)

In Section 252 of the National Defense Authorization Act for Fiscal 2006, "Research and Developments Efforts for purposes of Small Business Research," Congress adopted four wide-ranging reforms to the Department of Defense Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs in order to increase the effectiveness of SBIR and STTR for both the DoD and the defense industry. First, Section 252 directed closer alignment between R&D and acquisition goals of SBIR and STTR. Second, Section 252 authorized and funded creation by the Department of Defense (DoD) and the military services of the Commercialization Pilot Program (CPP) to facilitate transition of SBIR technologies into the acquisition process. Congress conditioned the use of CPP funds on detailed evaluative reporting to Congress. Third, Congress codified into statutory law President George W. Bush's Executive Order 13329, *Encouraging Innovation in Manufacturing*, which incentivized manufacturing technologies through the SBIR and STTR programs. Fourth, Congress clarified the authority to conduct testing and evaluation of SBIR and STTR technologies in SBIR and STTR Phases II and III. The implementation requirements were specified in the text of Section 252 and the Congressional Guidance Letter issued by the House and the Senate Small Business Committees.

This study analyzes the implementation of Section 252 by the Secretaries of Defense, the Army, the Navy, and the Air Force. It reflects the results of literature review and a survey of SBIR and STTR. The study questions are based on Section 252 text and the Congressional Guidance letter, as well as best practices identified in relevant academic and professional literature. The study finds that, while the DoD and the military departments have begun implementation of the DoD SBIR CPP program and other Section 252 reforms, progress is uneven. Specifically, agencies are not implementing section 252 CPP incentives and R&D alignment requirements to the fullest extent possible. The study recommends clarifications of legislative requirements and additional review of Section 252 implementation.

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THE DEPARTMENT OF DEFENSE SMALL BUSINESS INNOVATION RESEARCH AND SMALL BUSINESS TECHNOLOGY TRANSFER PROGRAMS: IMPLEMENTATION OF THE COMMERCIALIZATION PILOT PROGRAM AND RELATED REFORMS

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program and other Section 252 reforms, progress is uneven. Specifically, agencies are not implementing section 252 CPP incentives and R&D alignment requirements to the fullest extent possible. The study recommends clarifications of legislative requirements and additional review of Section 252 implementation.

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ACRONYMS AND ABBREVIATIONS

CPP	Commercialization Pilot Program
CRADA	Cooperative Research and Development Agreement
DFARS	Defense Federal Acquisition Regulation Supplement
DoD	Department of Defense
FAR	Federal Acquisition Regulations
IR&D	Independent Research and Development
JSTO•CBD	Joint Science & Technology Office for Chemical and Biological Defense
JWCA	Joint Warfighting Capability Assessment
JWCOs	Joint Warfighting Capability Objectives
MacB	MacAulay-Brown, Inc.
MILDEPs	Military Departments
NAVAIR	Naval Air Systems Command
PEOs	Program Executive Officers
RFPs	Requests for Proposals
SBIR	Small Business Innovation Research
SECDEF	Secretary of Defense
STTR	Small Business Technology Transfer
SYSCOM	System Command
TAP	Technology Assistance Program
TRIMS	Technology Risk Identification & Mitigation Software

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I. INTRODUCTION

The purpose of this paper is to investigate the implementation of Section 252 of the National Defense Authorization for Fiscal 2006, "Research and Developments Efforts for purposes of Small Business Research" with particular emphasis on the impacts of this legislation concerning the Department of Defense Small Business Innovation Research (SBIR) program. With Section 252, Congress adopted four wide-ranging reforms to the Department of Defense SBIR and Small Business Technology Transfer (STTR) programs in order to increase the effectiveness of SBIR and STTR for both the DoD and the defense industry.

Chapter II, gives general background information about SBIR and STTR. The section will describe the programs objectives. It will also describe firms' eligibility requirements to participate in the each program. A list of participating government agencies is also in this section. A description of each of the three phases for the programs is given at the end of this section.

Chapter III will delve into specific background of Section 252, including details from National Academies Symposium *SBIR and the Phase III Challenge of Commercialization*. Following that Symposium, "the Senate Committee on Small Business & Entrepreneurship proposed legislation that called for a commercialization pilot program."[1] The purpose of this section is to give the reader an idea of the SBIR and STTR programs conditions prior to Section 252 by putting it in context. After reading this section, the reader should understand the reasons why Congress adopted Section 252. The full language of the statute and the Congressional Guidance Letter can be found in Appendix A and Appendix B, respectively.

A survey was conducted directed primarily at SBIR and STTR Program Managers and administrators within DoD agencies and military services attempting to ascertain how Section 252 has been carried out within their specific agencies. In Chapter IV, the

[1] National Academy of Sciences, An Assessment of the Small Business Innovation Research Program at the Department of Defense, 2009, footnote 23, 29.

survey methodology is described in detail. This section clearly states the survey questions that were given to participants. This section also describes limitations identified by the survey administrators.

The analysis section the paper, Chapter V, will describe results from this survey. All of the respondents' answers for each question are analyzed and compared with the Section 252 legislation, the Congressional Guidance Letter, as well as with additional sources. The survey answers in many cases showed inconsistencies with the intent of the legislation, as well as with announced practices.

Finally, the paper will conclude with answer to the research questions and authors' recommendations.

II. BACKGROUND OF THE SBIR/STTR PROGRAM

Within the Department of Defense, the SBIR program awards contracts to qualifying small businesses, which display promise of producing cutting edge technology for military or dual-use applications. The technology may show promise, but that technology may still be too risky for private investment, due to various reasons, such as relatively low technological readiness level, and not past performance history for the company.[2] Therefore, a SBIR contract can act as initial funding to get what amounts to an idea developed into a product or service. The SBIR program began pursuant to the Small Business Innovation Act of 1982.[3] The STTR program began pursuant to Small Business Technology Transfer Act of 1992.[4] SBIR and STTR have no permanent reauthorization, but have been periodically reauthorized since then. The main difference between SBIR and STTR is that SBIR contracts are open solely to small businesses, defined as businesses with less than 500 employees, and STTR contracts are open to small businesses that collaborate with not-for-profit research organizations, such as universities and government laboratories.[5]

The SBIR and STTR program along with its sister program the Small Business Technology Transfer (STTR) program have four goals:

> (1) to stimulate technological innovation; (2) to use small business to meet federal and development needs; (3) foster and encourage participation by minority and disadvantaged persons in technological innovation; and (4) to increase private sector commercialization derived from federal research and development.[6]

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[2] See *SBIR and The Phase III Challenge of Commercialization Report of A Symposium*, ed. Charles W. Wessner (National Academies Press Washington, D.C., 2007).

[3] Small Business Innovation Development Act of 1982, Public Law 97–219.

[4] Small Business Technology Transfer Act of 1992, Public Law 102–564.

[5] SBIR and STTR Policy Directives. http://www.acq.osd.mil/osbp/sbir/deskreference/annex_a.htm and http://www.acq.osd.mil/osbp/sbir/deskreference/annex_b.htm.

[6] Small Business Innovation Development Act of 1982, Public Law 97–219.

The forth objective, commercialization, is defined by the U.S. Small Business Administration as "the process of developing marketable products or services and producing and delivering products or services for sale (whether by the originating party or by others) to Government or commercial markets."[7] SBIR/STTR commercialization includes sales to the government through public procurement prime contracts or subcontracts, as well as sales through private commercial markets. It also includes sales to the government of products or services that may later be sold commercially.

Table 1. Government Agencies Participating in SBIR and STTR

SBIR	STTR
Department of Agriculture	Department of Defense
Department of Commerce	Department of Energy
Department of Defense	Department of Health & Human Services
Department of Education	Department of Homeland Security
Department of Energy	National Aeronautics & Space Administration
Department of Health & Human Services	National Science Foundation
Department of Homeland Security	
Department of Transportation	
Environmental Protection Agency	
National Aeronautics & Space Administration	
National Science Foundation	
U.S. Small Business Administration	

There are 12 government agencies that participate in SBIR and six that participate in STTR. This report is focusing on DoD participation in SBIR/STTR. Each military department, as well as DARPA and MDA within DoD administers their own SBIR/STTR programs. Seven of these agencies under the Secretary of Defense administer the SBIR programs, but not STTR. Federal agencies with extramural R&D budgets of at least $100 million dollars are required to participate in SBIR. Federal agencies with extramural

[7] Annex A: Small Business Innovation Research Program Policy Directive September 24, 2002 http://www.acq.osd.mil/osbp/sbir/deskreference/annex_a.htm#Target3.

R&D budgets of at $1 billion dollars are required to participate in STTR. Participating agencies are required to set aside 2.5% and 0.3% of their R&D budgets for SBIR and STTR programs, respectively.[8]

Table 2. DoD Agencies Participating in SBIR and STTR

SBIR	STTR
Air Force	Air Force
Army	Army
Chemical and Biological Defense Program	Defense Advanced Research Projects Agency
Defense Advanced Research Projects Agency	Missile Defense Agency
Defense Logistics Agency	Navy
Defense Microelectronics Activity	
Defense Technical Information Center	
Defense Threat Reduction Agency	
Missile Defense Agency	
National Geospatial-Intelligence Agency	
Navy	
Special Operations Acquisitions and Logistics Center	

The DoD SBIR/STTR awards processes are divided into three phases. In Phase I, small businesses compete on SBIR/STTR topics that are published by the DoD. DoD announces SBIR topics three times a year and STTR topics twice a year. Small businesses that earn Phase I contracts can generally be awarded up to $150, 000 dollars[9] while participating in SBIR and up to $100,000 dollars while participating in STTR.[10] The purpose of Phase I is "for determining, insofar as possible, the scientific and technical merit and feasibility of ideas that appear to have commercial potential, as described in subparagraph (B), submitted pursuant to SBIR program solicitations."[11]

Phase I awardees can be awarded up to $1MIL for SBIR and $750,000 for STTR in a Phase II contract. The purpose of Phase II is "to further develop proposed ideas to

[8] The Statute is 15 U.S.C. 638.

[9] Federal Register Volume 75, 15,756.

[10] STTR Policy Directive, http://www.acq.osd.mil/osbp/sbir/deskreference/annex_b.htm.

[11] 15 U.S.C. 638.

meet particular program needs, in which awards shall be made based on the scientific, technical, and commercial merit and feasibility of the idea, as evidenced by the first phase and by other relevant information."[12]

Phase III is considered the commercialization phase. Phase III refers to work that derives from, extends, or logically concludes effort(s) performed under prior SBIR funding agreements, but is funded by sources other than the SBIR Program.[13] This is the step where only non-SBIR/STTR funds, typically from private sector investment or defense acquisition funds can be used to develop an actual product or service. In some cases, enough work can be completed in Phase I or II to satisfy a program office. Other cases, SBIR/STTR projects cannot cross the funding "valley of death" between Phase II and commercialization.[14]

[12] 15 U.S.C. 638.

[13] Annex A: Small Business Innovation Research Program Policy Directive September 24, 2002 http://www.acq.osd.mil/osbp/sbir/deskreference/annex_a.htm#Target3.

[14] National Academy of Sciences, An Assessment of the Small Business Innovation Research Program at the Department of Defense, 5–6.

III. BACKGROUND OF SECTION 252

The purpose of Section 252 of the National Defense Authorization Act for 2006 was to reform SBIR and STTR. Section 252 mostly addresses issues within the SBIR program, but does refer to STTR. The reason why the Congressional and Senate Small Business Committees are concerned with the state of SBIR and STTR is because they believe that leveraging the innovation of small businesses is vital for the U.S.'s national security. They also view Phase I and Phase II contract awards as investments of taxpayer dollars. Companies can be awarded up to $150K in Phase I, which results in a projects feasibility, and up to $1MIL (more can be approved with special authorization) in Phase II, which typically delivers a prototype. There is concern that too many projects do not make it to the elusive Phase III award (which cannot be funded using SBIR/STTR funds), which is the commercialization of a SBIR/STTR product or service. In the DoD context commercialization means insertion of technology into weapons systems or defense acquisition program. The "valley of death," which is when SBIR/STTR participants must find non-SBIR/STTR funds to further develop technology, between Phase II and Phase III has long been known as difficult to overcome.[15]

Attempting to reform SBIR and STTR Section 252, added the following subsections to Section 9 of Small Business Act; (x) Research and Development Focus, (y) Commercialization Pilot Program, language concerning Implementation of Executive Order No. 13329, and subsection (e9) language supporting testing and evaluation of SBIR and STTR technologies. Each of these subsections is meant to address challenges that have been identified within the SBIR and STTR communities by the National Academies Symposium on SBIR Commercialization and other inputs from government

[15] National Academy of Sciences, An Assessment of the Small Business Innovation Research Program at the Department of Defense 7.

and industry.[16] These challenges include SBIR and STTR topic alignment, expediting the commercialization of SBIR and STTR projects and assurance that Executive Order 13329, *Encouraging Innovation in Manufacturing,* is being implemented.

Subsection (x) Research and Development Focus mandates that the Secretary of Defense (SECDEF) will revise and update the criteria and procedures utilized to identify research and development efforts that are suitable for SBIR and STTR programs at least once every four years. The importance of this subsection was emphasized in Congressional Guidance Letter. It stated the following:

> First and foremost, [Subsection X] addresses the need for a strategic, DoD-wide review of the SBIR and STTR program (conducted not less than quadrennially) based on the latest research, science, and technology plans of the DoD.[17]

It also states what plans are to be used to determine the topics to be pursued by SBIR/STTR. The plans that the statute stipulates to be utilized are the Joint Warfighting Science and Technology Plan, the Defense Technology Area Plan of the Department of Defense, and the Basic Research Plan of the Department of Defense. Each of these plans has a specific emphasis. However, these plans were to focus research and development efforts within the DoD SBIR and STTR to areas that are of strategic importance to warfighting efforts. Each of these plans will be discussed in turn.

The Joint Warfighting Science and Technology Plan was established by Public Law 104-201, div. A, title II, Sec. 270, Sept. 23, 1996, and the intent of this plan is that it:

> Takes a joint perspective horizontally across the Applied Research (6.2) and Advanced Technology Development (6.3) plans of the services and defense agencies to ensure that the requisite technology and advanced concepts for superior joint and coalition warfighting are supported. It ensures that the near-, mid-, and long-term needs of the joint warfighter are properly balanced and supported in the S&T planning, programming, budgeting, and assessment activities of the DoD. The JWSTP is focused around 10 Joint Warfighting Capability Objectives (JWCOs). These

[16] *Incentives and Technology Transition, Improving Commercialization of SBIR Technologies, A White Paper,* for The Small Business Technology Council, Robert Allen Baker, Vital Strategies Inc.

[17] See Appendix C for the text of the Congressional Guidance Letter.

> objectives support the Joint Warfighting Capability Assessment (JWCA) and the four operational concepts emphasized in JV 2010: dominant maneuver, precision engagement, full-dimension protection, and focused logistics. A significant feature of the JWSTP is the identification of mechanisms for the timely transition of technology to the warfighter in the field before it becomes obsolete or falls in the hands of our adversaries. [18]

The second plan, The Defense Technology Area Plan of the Department of Defense. This plan,

> Presents the DoD objectives and the Applied Research and Advanced Technology Development) investment strategy for technologies critical to DoD acquisition plans, service warfighter capabilities, and the JWSTP. It also takes a horizontal perspective across the service and defense agency efforts, thereby charting the total DoD investment for a given technology. The DTAP documents the focus, content, and principal objectives of the overall DoD science and technology efforts.[19]

Finally, *The Basic Research Plan of the Department of Defense* is described as follows:

> Presents the DoD objectives and investment strategy for DoD-sponsored Basic Research (6.1) performed by universities, industry, and service laboratories. In addition to presenting the planned investment in each of 12 technical disciplines composing the Basic Research Program, the plan highlights seven strategic research objectives holding great promise for the development of enabling breakthrough technologies for revolutionary 21st century military capabilities. These strategic research objectives are; biometrics, nanoscience, smart structures, mobile wireless communications, intelligent systems, and compact power sources.[20]

Finally, Subsection (x) also mandates that Program Managers and Program Executive Officers be included during topic generation.[21] Topic generation has been identified as area within SBIR and STTR that can be improved by Program offices, small businesses, and prime contractors. One way for a product or service to commercialize is

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[18] 1997 Defense Technology Area Plan, http://www.fas.org/spp/military/docops/defense/97_dtos/intro.htm.

[19] Ibid.

[20] Ibid.

[21] HR 1815 Section 252.

to attract acquisition funds from Programs.[22] However, if the SBIR/STTR project is not aligned with an acquisition program to fill in technological gaps then it is unlikely to attract those kinds of funds. Therefore, early involvement from Program Offices is essential.

Next, Subsection (y) authorizes Secretary of Defense and each military department secretaries to create a Commercialization Pilot program (CPP). The CPP's intent is to accelerate the transition of SBIR technologies into Phase III including acquisition process. If a department decides to create a CPP then the department must adhere to all the requirements within subsection (y). These requirements include that the SECDEF and Secretary of each military department must identify SBIR projects that show potential for rapid transition into Phase III and certify in writing that the identified projects will meet high priorities within that military service. Each military department is authorized to use up to 1 percent of available SBIR funds to administer the CPP, but cannot be used to award Phase III contracts. Subsection (y) also mandates that the SECDEF must provide an evaluative report to the Committee on Armed Services and the Committee on Small Business and Entrepreneurship of the Senate and the Committee on Armed Services and the Committee on Small Business of the House of Representatives. This report must contain an accounting of funds, description of incentives and activities performed under the CPP, and results achieved under the CPP.

The origin of the CPP came from the 2005 National Academies Symposium on SBIR and the Phase III Challenge of Commercialization. This Symposium was a gathering of leadership from government agencies, large defense contractors (prime contractors), and small businesses. During the Symposium representative from each discussed challenges of commercialization from their own point of view. Policy reform recommendations at the Symposium generally fell within two categories: (1) "possible

[22] National Academy of Sciences, An Assessment of the Small Business Innovation Research Program at the Department of Defense, 35.

changes in agency program management, including better use of incentives for managers, roadmaps, and greater matchmaking and (2) ways in which small businesses and the prime contractors could better align their work to improve Phase III outcomes."[23]

While focusing on the "incentives for better management" the intent was to incentivize program managers and program executive officers to introduce new technologies that cannot only result in substantial time, cost, or performance benefits, but can also present some risk of disruption to program costs and schedules if the technologies failed. Leading government officials, industry executive, and policy experts proposed various incentives for better SBIR program management. For example, incentives were proposed in the following areas:

- Alignment. Entering the SBIR company into a program with which the program executive officer was already engaged is one way to better focus SBIR projects on outcomes that directly support agency programs (and program officer) objectives. As noted by some speakers, this could allow SBIR projects to connect with Phase III activities already under way.
- Reliability. This involves identifying technologies that have been operationally tested and need little if any modification. This suggestion by a participant reflected widely held views that program executive officer involvement was critical in bringing SBIR technologies to the necessary readiness level.
- Capacity. As Dr. Michael McGrath, Deputy Assistant Secretary of the Navy for Research, Development, Testing, and Evaluation, noted, SBIR firms need to take steps to convince program executive officers not only that the SBIR technology works, but also that the small business will be able to produce it to scale and on time.
- Budget Integration. Some participants noted that program executive officers needed to see that the SBIR set-aside will be used to further their own missions. This calls for building SBIR research into the work and budget of program offices. By contrast, the Air Force's program offices submit a budget based on independent cost estimates. SBIR awards are then taken as a 2.5 percent tax out of that budget.

[23] National Academy of Sciences, An Assessment of the Small Business Innovation Research Program at the Department of Defense, 23.

- Training. Major Stephen noted that training program executive officers to help them understand how SBIR can be leveraged to realize their mission goals is necessary. However, Mr. Carroll of Innovative Defense Strategies noted that SBIR training had been part of the general program executive officer training curriculum for one year, but had since been deleted.
- Partnering. As described by Carl Ray, the SBIR program at NASA isforming partnerships with mission directorates aimed at enhancing "spinin"—the take-up of SBIR technologies by NASA programs.
- Emphasizing Opportunity. Dr. McGrath noted that the Navy's SBIR management attempts to provide a consistent message to program executive officers and program managers—that "SBIR provides money and opportunity to fill R&D gaps in the program. Apply that money and innovation to your most urgent needs."[24]

With respect to the roadmaps, "some participants emphasized the need to coordinate small business activities with prime contractor project roadmaps." This is due to the complexities involved in integrating subsystems that are SBIR candidates into large weapon systems that prime contractors act as lead integrators. "Lockheed's Mr. Ramirez noted that "to make successful transitions to Phase III, SBIR technologies must be integrated into an overall roadmap." Lockheed Martin uses a variety of roadmaps to that end, including both technical capability roadmaps and corporate technology roadmaps. The Raytheon representative added that roadmaps are important because it is necessary to coordinate the technology transition process across the customer, the supply chain, and small businesses. Coordination should include advanced technology demonstrations, which could be used to integrate multiple technologies into a complex system."[25]

Ultimately, all symposium participants agreed that the transition to commercialization needed to be reformed. SBIR technologies need buy-in from program managers and prime contractors and the attitude of SBIR being a "tax" on acquisition and R&D programs funding needed to change. Statements at the NAS Symposium provided examples of incentives strategies needed to effect such a change. Mr. Robert McNamara of the Navy, Program Executive Officer for PEO Submarines, described himself as an

[24] National Academy of Sciences, An Assessment of the Small Business Innovation Research Program at the Department of Defense, 23–4.

[25] Ibid., 24–25.

advocate of small business, and said that the centerpiece of his advocacy was the SBIR program. In his Requests for Proposals (RFPs), he incentivizes primes to subcontract certain percentages of the work to small business.

For example, he contracted with General Dynamics on the Virginia-Class Program demonstrating that small businesses are a high priority and offered a million-dollar "bounty" per hull as an additional incentive fee for contractors who met small-business sub-contracting goals. The Navy owes it to the large prime contractors, he said, to provide real incentives for a policy considered truly important.[26]

Colonel Stephen, U.S. Air force, suggested that in order to gain buy-in, the program should be sure to focus not only on research, but also on the results that program managers need—outputs that directly support agency objectives. Dr. Parmentola agreed, saying that program managers want technologies that have been operationally tested and require little, if any, modification. Section 252 makes provisions for testing and evaluation. Opening the SBIR program to test and evaluation is an incentive for PMs because results from T&E may be used to gauge the TRL of a SBIR project. In addition, as stated by participants, the TRL is more important to PMs than ongoing research.

This need for meaningful incentives was also reiterated by prime contractors. Prime contractors represented at the conference stated that they have focused management attention, shifted resources, and assigned responsibilities within their own management structures to capitalize on the creativity of SBIR firms and promote greater testing and evaluation.[27] Lockheed Martin also intended to build more formal business relationships with its small businesses, which are critical to successful Phase III transitions. This process must begin with joint visits to customers when both sides can discuss product discriminators, areas for further investigation and collaboration within Lockheed's own Independent Research and Development (IR&D) and Cooperative

[26] National Academy of Sciences, An Assessment of the Small Business Innovation Research Program at the Department of Defense, 142.

[27] Ibid., 28.

Research and Development Agreement (CRADA) technology culture. These relationships would also help integrate the SBIR technologies and firms, and allow Lockheed to demonstrate its successes and build formal partnerships.

During the Symposium, Dr. Kidalov, from the Senate Small Business Committee, lead a panel discussion on incentives for contracting with SBIR firms. Dr. Kidalov noted that in his experience large prime contractors needed a champion, a corporate strategy, and incentives to continue using SBIR firms. He noted that these incentives need to go beyond the competitive advantages they provide. Dr. Kidalov asked they question whether or not the panelist saw value in a system that would allow for recognition of efforts to contract with SBIR firms, perhaps from Congress and the government agencies. All panelists agreed.

Specifically, in response, a Boeing representative pointed out that incentives are built into contracts when agencies award them for many reasons, such as schedule and budgetary. His was pointing out that it should be possible to include similar incentives, such as those for working with SBIR firms. An ATK representative agreed that incentives were essential because primes, like PMs, were risk adverse by nature. Incentives would encourage them to take those risks.

A Raytheon representative was more specific in reposed to the question posed by Dr. Kidalov. He stated three incentives that would help the case to use SBIR firms. One, to streamline and otherwise optimize the SBIR process, which in turn would ensure the development of many technologies needed for the long term. Secondly, an assurance that customers have realistic plans to support the transition from Phase II through to Phase III. Third, was an incentive that SBIR firms help meet the requirement to work with small disadvantaged businesses.[28]

Section 252 mandates the full implementation of Executive Order 13329 (Encouraging Innovation in Manufacturing). The impact of Section 252 is that future Presidential administration cannot ignore this order. Executive Order 13329 was issued

[28] National Academy of Sciences, An Assessment of the Small Business Innovation Research Program at the Department of Defense, 82.

on February 24, 2004 by President George W. Bush. The goal of the order is outlined in Section 1, which stresses the importance of the Federal government role in encouraging technological innovation in the U.S. economy. As part of that encouragement, the Order specifically tasks the Small Business Innovation Research program and the Small Business Technology Transfer program "in helping to advance innovation, including innovation in manufacturing, through small businesses."[29] The Executive Order required that Department and Agency Heads, which have a SBIR or STTR program "give high priority within such programs to manufacturing-related research and development."[30] The order places a reporting requirement on the department and agency heads to provide an annual report to the Small Business Administration and the Director of the White House Office of Science and Technology Policy in which they are to report on their efforts in meeting this order.

An impact of the Executive Order issuance was that the U.S. Small Business Administration proposed amendments to the SBIR Policy Directive on May 19, 2005 to incorporate the goals of the Executive Order. While the amendments to this Policy Directive were not finalized, nevertheless, the agencies themselves established their own implementation plans.[31]

In order to address another issue, which impairs SBIR projects from transitioning to Phase III, Section 252 clarifies the definition of what constitutes a commercial application. The clarification was necessary in order to remove barriers imposed by overly restrictive interpretations of Phase II and Phase III requirements. Therefore, the definition of a "commercial application" was expanded to include test and evaluation of products, services, or technologies for use in technical or weapons systems, and further, awards for testing and evaluation of products, services, or technologies for use in

[29] Section 1: Executive Order 13329 issued February 24, 2004.

[30] Section 2, Executive Order 13329 issued February 24, 2004.

[31] For example, the Air Force, Navy and Army have all issued directives for implementation.

technical or weapons systems may be made in either the second or the third phase of the Small Business Innovation Research Program and of the Small Business Technology Transfer Program.[32]

[32] See Section 252 of H.R 1815.

IV. SURVEY METHODOLOGY

A. SURVEY GOALS

In order to access effectiveness of efforts designed to increase Phase III implementation success rates especially in regard to the development of Commercialization Pilot Projects (CPP), input was sought from Program Managers and experts within the military departments that are involved with the Small Business Innovation Research (SBIR) program. One-hundred and two individuals were asked to complete an online survey. A copy of the survey protocol is contained in Appendix A. The aim of the survey was to document the agency implementations and practice in regard to the Commercialization Pilot Program and other Section 252 reforms. With this information, it is then possible to identify what was being done to implement Section 252, and how each agency worked to meet the Congressional intent of the CPP.

B. SURVEY DESIGN

The survey focuses on seven main research questions from the Congressional Guidance letter to Under Secretary of Defense for Acquisition, Technology, and Logistics, Kenneth J. Krieg:[33]

> 1: How the DoD implemented the new requirement in Section 252(a) for research focus of its SBIR and STTR programs?
>
> 2: How the DoD and each military department planned to involve acquisition program managers and program executive offices in SBIR/STTR topic selection and management and to ensure that SBIR/STTR is integrated into the DoD's mission and its acquisition framework, as contemplated in Section 252(a), SBIR Commercialization Pilot Program, and Section 252(c), inclusion of testing and evaluation works as part of SBIR/STTR commercialization activity?

[33] See Appendix C for the text of the Congressional Guidance Letter.

3: How the DoD's and each military department's acquisition program managers and program executive officers planned for post-SBIR/STTR funding, through the Program Objective Memoranda and other vehicles, to utilize SBIR/STTR technology resources in their acquisition process, as stated in Section 252(a), SBIR Commercialization Pilot Program?

4: How the DoD and each military department planned and implemented the SBIR Commercialization Pilot Program, and specifically what processes these military services and defense agencies developed and implemented to ensure identification of optimal SBIR/STTR Phase I-II projects for accelerated transition through this Pilot Program?

5: What acquisition incentives and activities did the DoD and each military department deploy to accelerate the transition of SBIR/STTR technologies into the acquisition process though the Pilot Program?

6: What specific reporting requirements did the DoD and each military department impose on acquisition program managers, program executive officers, and prime contractors as part of the annual evaluative report to Congress as outlined in Section 252(a)?

7: How did the DoD and each military department implement Executive Order 3329, *Encouraging Innovation in Manufacturing*, codified into law as part of Section 252(b)?

C. SURVEY SCORING

Respondents were asked basically two types of question, those requiring a positive or negative response or those requesting a response to rate upon a scale.

Respondents were also given the option of choosing, "Don't Know" or "Not Applicable"

D. SURVEY SUBJECTS

All DoD agencies and departments participating in SBIR and STTR were asked to participate in the survey. A complete list of agencies solicited is contained in A.1 of Section IV of this paper. Each point of contact was sent an e-mail with a request to participate in the survey and a link to the SurveyMonkey.com website where the on-line survey was posted to refresh respondents recollection, the survey was supplemented with the text of Act and a copy of the Congressional Guidance Letter issued jointly by the Chair and Ranking Minority Member of the Senate Committee on Small Business and

Entrepreneurship and the Chair of the House Committee on Small Business. These documents can be found in Appendices B and C, respectively. Point of contacts may have assigned additional respondents within their agency. Respondents were asked to identify their agency. Respondents' names and position within their agency was not collected and therefore remain anonymous.

E. SURVEY LIMITATIONS

The survey was primarily intended to ask responsible agency official to identify practices and polices related to the reforms adopted by Congress and outlined in Section 252.

The data collected in the survey is therefore the primary source of the conclusions presented. No respondent actually completed the survey in total. This was partly by design as large number of the survey questions were only presented to the respondent depending on the previous answer.

The conclusions discussed in the following chapters are based on results obtained when multiple responders provided the answers to the question being asked supplemented by reviews of publications and academic literature. The complete survey is found in Appendix A.

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V. SURVEY RESULTS AND ANALYSIS

A. RESPONSE RATE AND BACKGROUND RESULTS

1. Organizations Participating and Background

One-hundred and two individuals were asked to complete the online survey. Of those one-hundred and two, nineteen responses were received with the largest number participating being identified as from Air Force organizations.

Partly as a result of the design of the survey to adjust the questions asked depending on the response to previous questions, no one participant completed all 30 questions within the survey.

The organizations responding and their response rates are shown in Table 3.

Table 3. Response by Organization

Invited Participant Organization	Participated?	Number of Responses
Office of the Secretary of Defense/Office of Small Business Programs	No	0
Army	No	0
Navy	Yes	3
Air Force	Yes	4
Missile Defense Agency	No	0
National Geospatial Intelligence Agency	Yes	1
Joint Science and Technology Office for Chemical and Biological Defense	No	0
Defense Advanced Research Projects Agency	No	0
Defense Microelectronics Activity	No	0
Defense Logistics Agency	No	0
Defense Threat Reduction Agency	No	0
Office of the Deputy Under Secretary of Defense (Science and Technology)	No	0
U.S. Special Operations Command	No	0
Commercialization Pilot Program Implementing Contractor–Army	No	0
Commercialization Pilot Program Implementing Contractor–Navy	No	0
Total Responses	3	8

B. ORGANZATIONAL ALIGNMENT OF REGULATIONS, POLICIES, PROCEDURES WITH SBIR AND STTR RESEACH FOCUS

1. Alignment of SBIR/STTR Topics With DoD Research Plans

Given an opportunity to respond to a question regarding the adoption of regulations, policies, or procedures necessary for compliance with Section 252's requirement for alignment of SBIR and STTR research topics, with those set forth in the Joint Warfighting Science and Technology Plan, the Defense Technology Area Plan, and the Basis Research Plan of the Department of Defense, 50% of the respondents for the organization responded that their organization was not in alignment with the plan (Figure 1). There were 37.5% who responded with an affirmative response that their organization were in alignment with the plan.

There were 12.5% of the respondents that answered that they did not know if they had institutionalized SBIR/STTR topic alignment with the Section 252 identified DoD research plans in their organization.

When the results are broken down by organization (Figure 2), the Navy response indicated that they were more in compliance than any other agency, and the Air Force the least. Overall, all responding organizations indicated that they did not have the topic alignment required by Section 252 as was outlined previously in this paper.

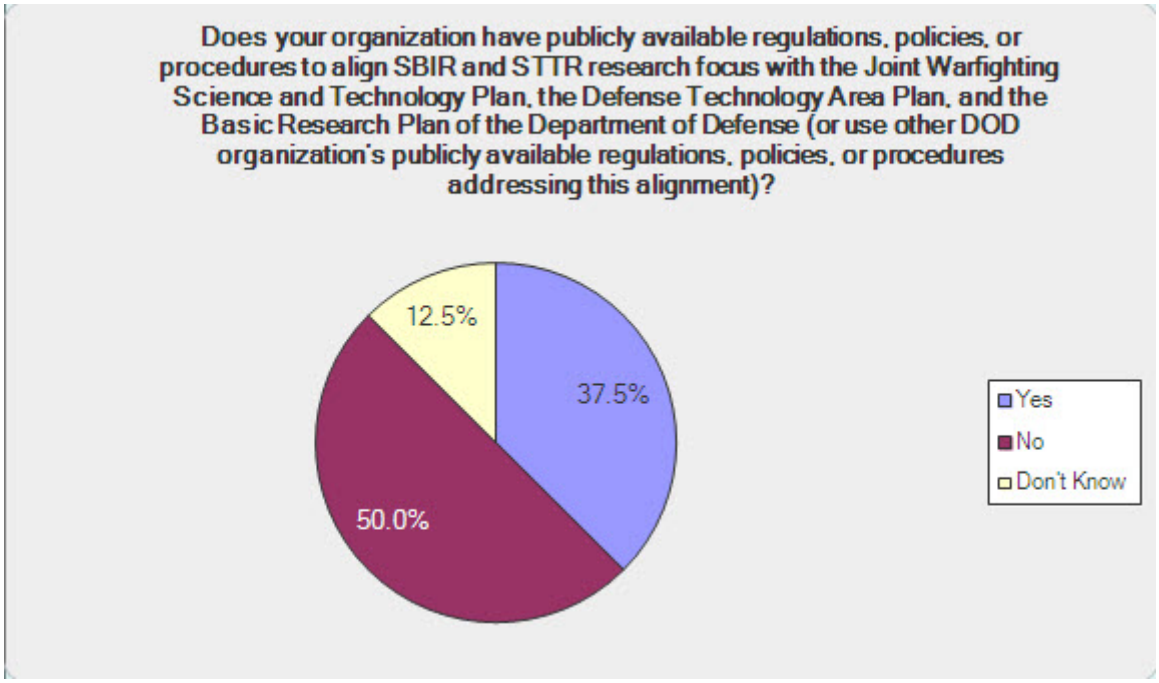

Figure 1. SBIR/STTR Policy Alignment with DoD Research Plans

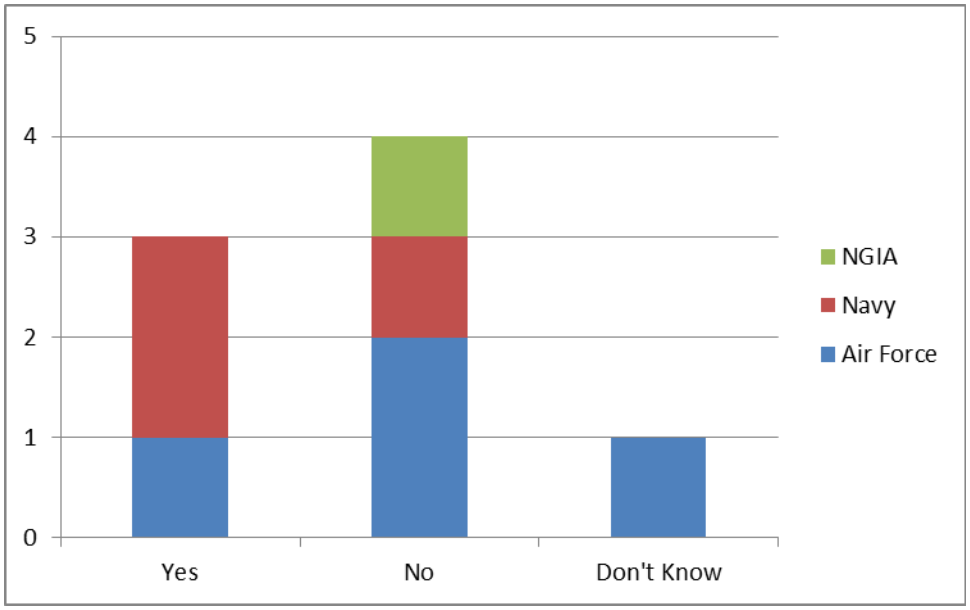

Figure 2. SBIR/STTR Policy Alignment with DoD Research Plans Response by Organization

2. Analysis

This finding is surprising as the Research Development Testing and Evaluation communities control the selection of SBIR/STTR topics in the Air Force, (with some exception for space-related systems),[34] and Army, while the Navy approaches topic generation by the program offices.[35] The Army and Air Force labs should be well aware of the defense science plans, which are required for topic generation and the statutory requirements for generating those topics.

The conclusion, which can be inferred by this data, is that either the organizations are uninformed regarding the statutory alignment requirement, or they were aware but did not put the requirements in place. Further research would have to be conducted to determine which of the two conclusions are correct.

3. Alignment of SBIR/STTR Topics With DoD Research Plans–Program Manager/PEO Input

With a response of 50%, most respondents answered with a "not applicable" to the question as to whether there were regulations, policies, or procedures in place to provide for the input of Program Manager and/or Program Executive Officers to determine the SBIR and STTR research and development (R&D) focus areas. (See Figure 3)

In contrast, 37.5% of the respondents answered positively that there were regulations, policies, or procedures in place to provide input of Program Managers and/or Program Executive Officers as required by Section 252. There were 12.5% that answered that they did not know.

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[34] *Space Acquisitions Challenges in Commercializing technologies Developed under the Small Business Innovation Research Program* (GAO Report 11-21), November 2010, 9.

[35] DoD Small Business Innovation Research Program, DoD Inspection General Report D-2009-048, January 30, 2009.

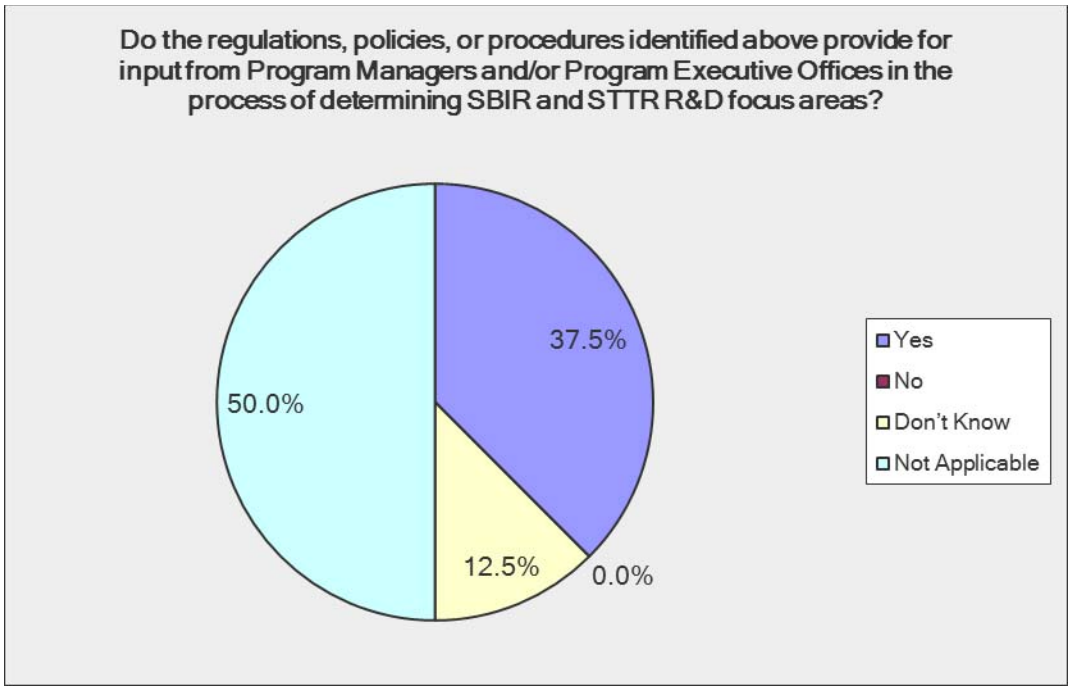

Figure 3. Program Manger/Executive Officer Input into SBIR/STTR Focus Areas

As shown in Figure 4, the response by organization to this question again shows the Navy indicating their organizations compliance with Section 252, which calls for the input of Program Managers and Program Executive Officers in the identification of areas of research and development of SBIR and STTR Program areas of research.[36] These results mirror those of the previous question.

[36] This requirement is also more fully developed within paragraph 3 of the Congressional Guidance Letter. See Appendix C.

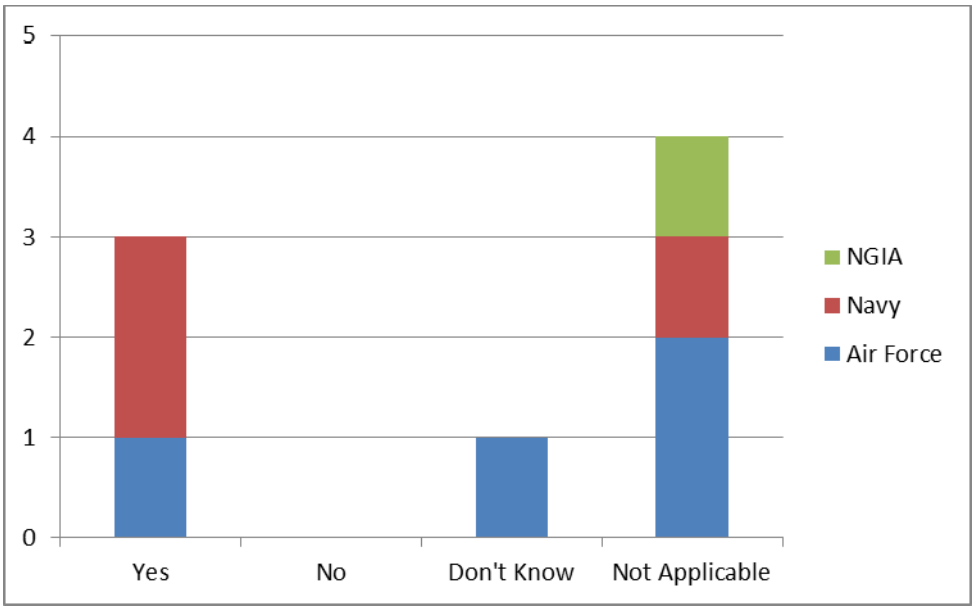

Figure 4. Program Manager/Executive Officer Input into SBIR/STTR Focus Areas Response by Organization

4. Analysis

However much the response of the Navy organization shows their understanding of this section of the legislation, the overwhelming response by all organizations indicated that the involvement of Program Managers and Program Executive Officers in determining focus areas was not applicable to their SBIR/STTR program implementation.

This finding is also surprising especially since a 2006 Memorandum from the Office of the Under Secretary of Defense (AT&L) issued the SBIR policy requiring "at least 50% of SBIR topics have acquisition community endorsement or sponsorship."[37] As reported in the Inspector General report of January 30, 2009, which related the results of a Navy 2007 SBIR symposium, it was noted that the Navy writes SBIR topics that are closely aligned with the needs of the acquisition community for easier transitions of technology projects. As a result, Navy topics are less risky and they transition to commercialization (Phase III) more easily" then the topics developed by other means.[38]

[37] Under Secretary Kenneth J. Krieg, Small Business Innovation Research (SBIR) Program Memorandum, June 22, 2006.

[38] DoD Small Business Innovation Research Program, 9.

In addition to the success reported by the Navy, involvement of the acquisition community in topic generation was also recommended as a best practice in a congressionally mandated SBIR study conducted by the National Academy of Sciences.[39]

As was also noted in the Inspector General report, this requirement for involving the acquisition community members in the development of topics for SBIR/STTR projects may pose a problem for DARPA as their focus isn't on "urgent needs and requirements" but rather on "radical innovations that may take years to prove feasible.[40] Consequently, an area of further research may be how should an organization with a focus, such as DARPA's participation in SBIR/STTR topic generation and what guidelines should be provided to smooth Phase III transitions for organizations, which have a similar focus?

Again, additional research would have to be conducted to determine the reasons behind these responses were, i.e., ignorance of the requirement, or disregard.

5. Alignment of SBIR/STTR Topics With DoD Research Plans—Quadrennial Strategic Review

With a combined response rate of 75% most respondents answered with a "Don't know" or "Never Participated" response to the question as to whether there was organizational participation in a Quadrennial Strategic Review of SBIR and STTR programs in accordance with the regulations, policies, or procedures that align topics with DoD research plans and Program Manager/Program Executive Officer inputs to the same (see Figure 5).

Only a quarter, 25%, indicated that in either "most instances" or in "some instances" their organization participated in these reviews as required by Section 252 (a)(1).

[39] An Assessment of the Small Business Innovation Research Program at the Department of Defense, National Academy of Sciences, 2009.

[40] Ibid., 10.

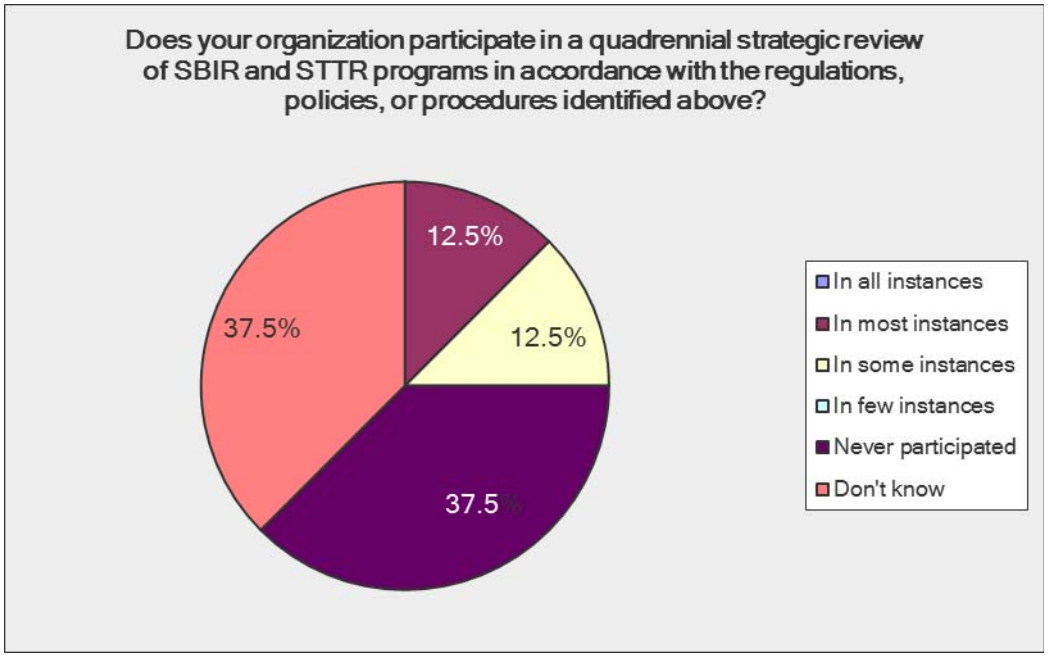

Figure 5. Response to Quadrennial Review

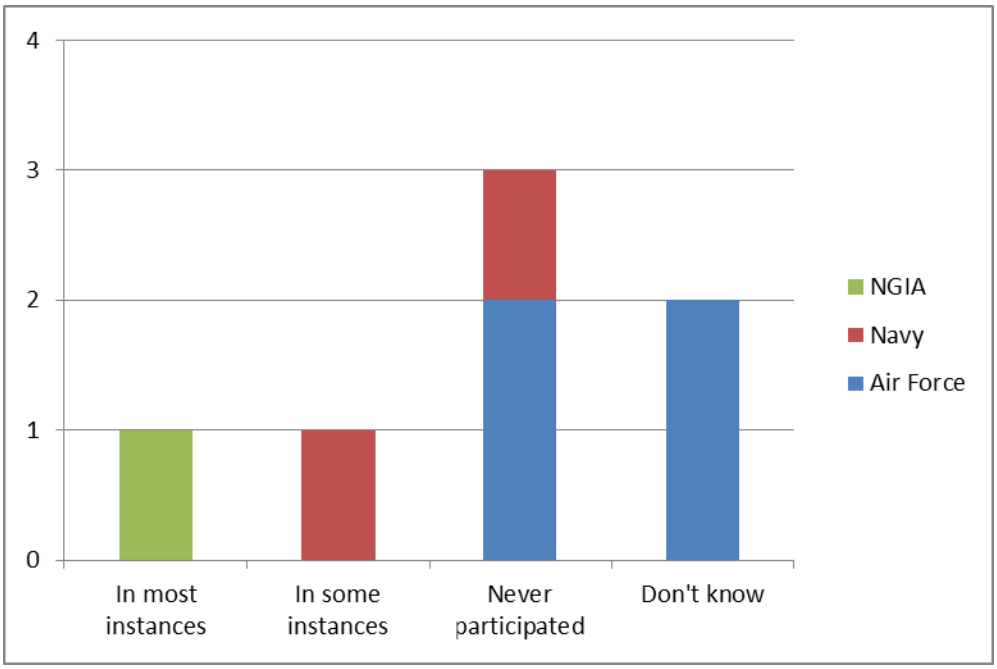

Figure 6. Response to Quadrennial Review by Responding Organization

6. Analysis

The organizational responses to this question were interesting. The Air Force responders either did not participate or did not know if their organization participated in the Secretary of Defense Quadrennial Strategic Review. The Navy split between one respondent indicating that their organization had participated in some instances and the other responded indicated that they had never participated. One other Navy respondent did not provide any answer to the question.

Of interest also was the response from the NGIA, which responded that their organization participated in most instances. This response seemingly contradicts the responses from the previous questions in which they answered either in the negative or not applicable to those parts of the legislation which required alignment with DoD research plans and Program Manager/Program Executive Officer input to the Quadrennial Strategic Review.

In any case, one can conclude from these results, that the participation of the DoD organizations in the Secretary of Defense's Quadrennial Strategic Review of SBIR/STTR is low. Furthermore, during literature review for the purposes of this report, no information was found regarding the SBIR/STTR Quadrennial Strategic Review. This may be due to the nature of the review itself or what is more likely in the opinion of the authors, that the review has not been conducted as the legislation stipulates. The fact that since Section 252 was adopted, there have been two Quadrennial Defense Reviews, one in 2006, the other in 2010, neither of which apparently had a Quadrennial Strategic Review conducted thereafter.

C. CREATION OF THE COMMERCIALIZATION PILOT PROGRAM (CPP)

1. Creation of the Commercial Pilot Program (CPP)

Paragraph (y)(1) of Section 252 gives the Secretaries of Defense, Army, Navy, and Air Force the authority to create a Commercialization Pilot Program with the stated goal to "accelerate the transition of technologies, products, and services developed under the Small Business Innovation Research Program to Phase III, including the acquisition

process." With a response of 62.5%, most respondents answered with an affirmative to the question as to whether their organization created the Commercialization Pilot Program (CPP). (Figure 7)

However, 25% of the respondents answered in the negative that their organization had not created the CPP, while 12.5% answered that creation of the CPP was "Not Applicable" to their organization.

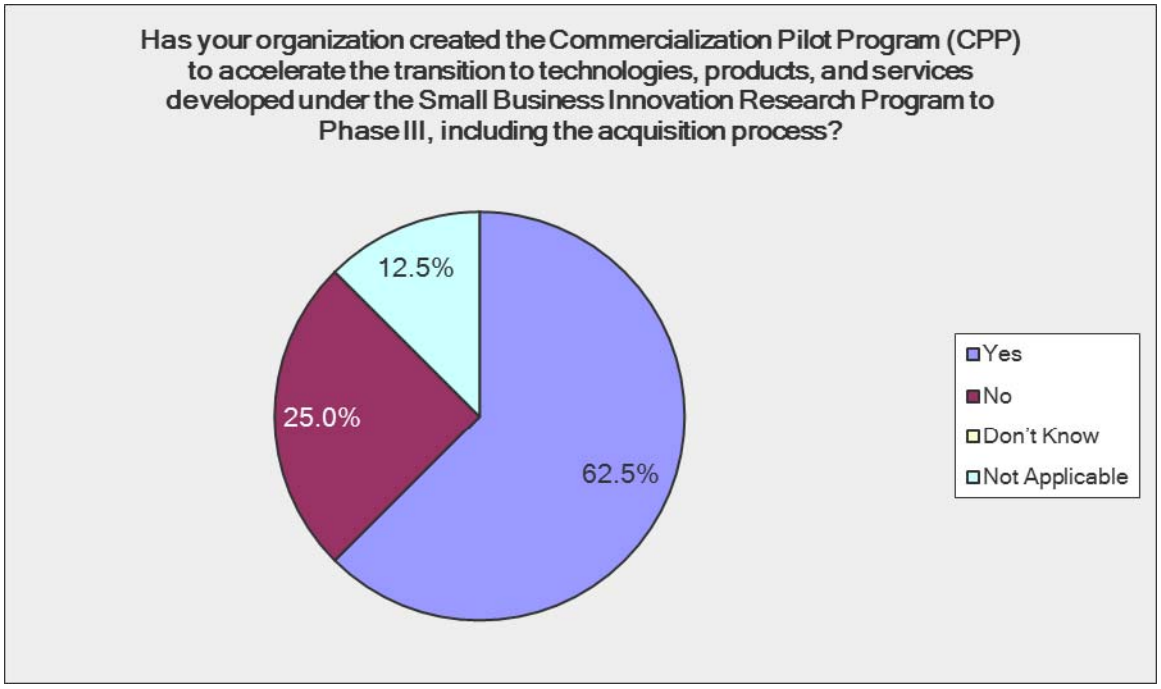

Figure 7. Response to Creation of the Commercial Pilot Program (CPP)

2. Analysis

The majority of the military departments represented in the survey respondents indicated that they had created the Commercialization Pilot Program (CPP) with the Air Force slightly more responding in the affirmative then the Navy respondents. (Figure 8)

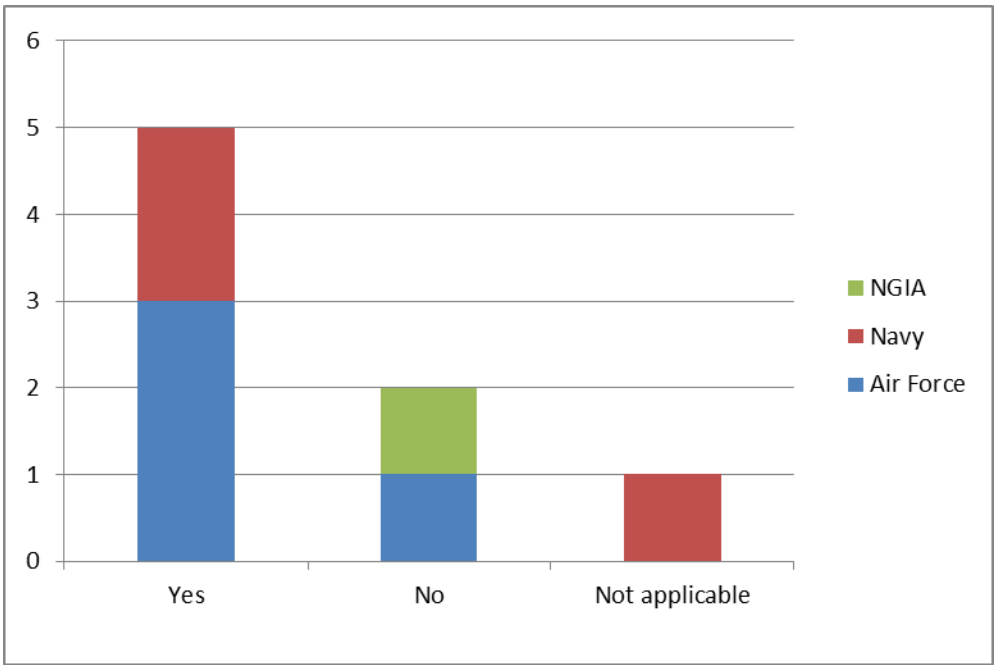

Figure 8. Response by Service to Creation of the Commercial Pilot Program (CPP)

The legislation's language allowed the departments to create this program; they were not required to do so by the legislation. However, if they did choose to create the CPP program, there were specific requirements, which had to be followed because the CPP is self-funding. Whether the requirements were followed forms the basis for the next questions in this section.

In the case of the Navy, whether the CPP was created as a separate program or not is a subject of some conjecture. In a report done by the Navy SBIR program office titled *A Report on the Navy SBIR Program: Best Practices, Roadblocks, and Recommendations for Technology Transition* and released in 2008 it was stated that "One could argue that the Navy's SBIR program already meets the intent of the CPP legislation and we should continue business as usual."[41] That study states that the Navy's Transition Assistance

[41] The Navy Small Business Innovation Research Program Office, A Report on the Navy SBIR Program: Best Practices, Roadblocks, and Recommendations for Technology Transition, April 2008, iii.

Program (TAP) assists SBIR/STTR participates and helps to meet knowledge and support gaps by providing support to these program participants within Phase II in order "to help the SBIR firm delivery (sic) a technology product to DoD and the Navy."[42]

In any case, the Navy does have what it calls "Phase II.5" which includes the TAP and refers to it as a CPP program.[43] It utilizes funding self-funding set-asides for the CPP to pay for the Transition Assistance Program and has the System Command (SYSCOM) SBIR Transition Manger making the determination as to which firm is invited to participate. In addition, each SYSCOM has their award structure and requirements to receive be selected for Phase II.5.

This paper does not attempt to make any determination as to whether the Navy SBIR program with the TAP and Phase II.5 component included does or does not meet the definition of the CPP, it is clear from the evidence above that the Navy believes that is the case, rather the presence of the TAP program may be confused with the CPP, which is why the Navy response seems to contradict itself. This however is not a sematic issue, as Section 252 has specific conditions on the usage of CPP funds.

In addition to the Air Force and Navy creation of the CPP, the Army, the Missile Defense Agency, and the Joint Science & Technology Office for Chemical and Biological Defense (JSTO•CBD), created CPP programs. Descriptions of each of these services CPP programs along with some additional information regarding the Air Force and Navy CPP programs are found in Appendix D of this document.

3. Commercial Pilot Program (CPP)—Identification of Projects for Rapid Transitioning Through CPP

With a response of 62.5%, most respondents answered with an affirmative to the question as to whether there organization had formal processes or procedures for the

[42] The Navy Small Business Innovation Research Program Office, A Report on the Navy SBIR Program, 35.

[43] Navy Small Business Innovation Research, Small Business Technology Transfer, http://www.navysbir.com/cpp.htm.

identification of optimal SBIR Phase I or Phase II projects for rapid transitioning and related assistance through the Commercialization Pilot Program (CPP) into Phase III and the acquisition processes as required in Section 252 (y)(2). (See Figure 9)

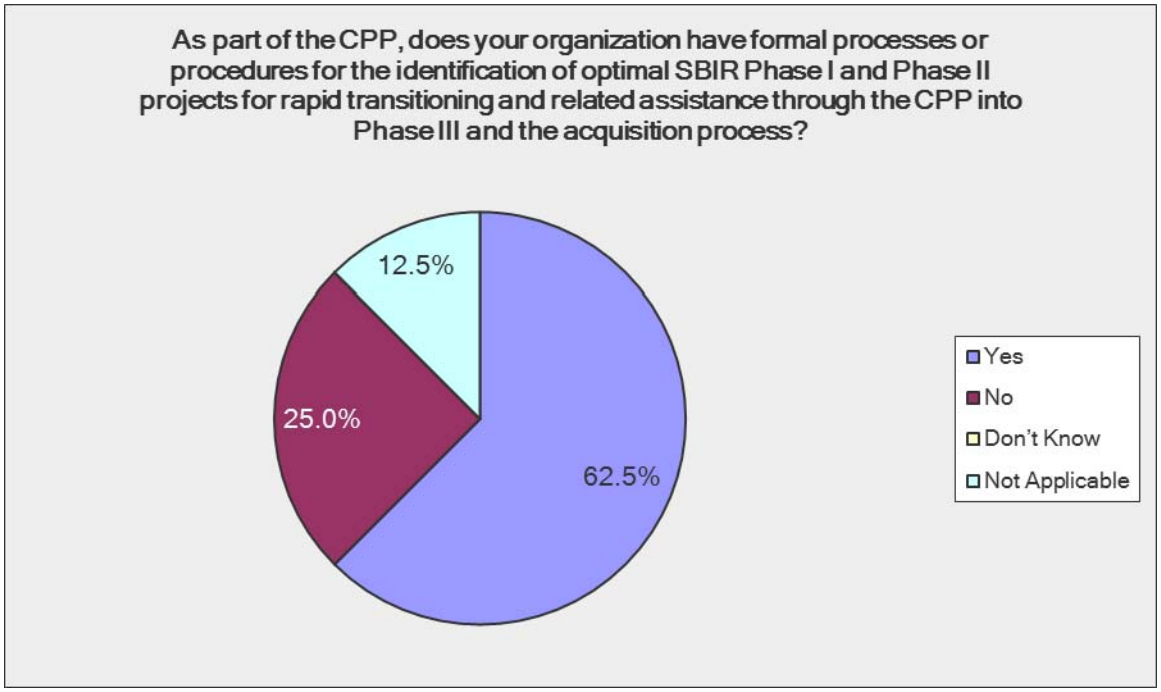

Figure 9. Response to Commercial Pilot Program (CPP)–Identification of Projects for Rapid Transitioning Through CPP

Conversely, 25% of the respondents answered in the negative that their organization did not have the processes or procedures in place, while 12.5% answered that creation of the processes or procedures was "Not Applicable" to their organization.

The breakdown of the respondents to this question (Figure 10) mirrored that of the previous question; namely, the Air Force led the Navy in answering affirmatively to this question, the one NGIA and one Air Force respondent answering negatively, and the one Navy respondent answering as not applicable to their organization.

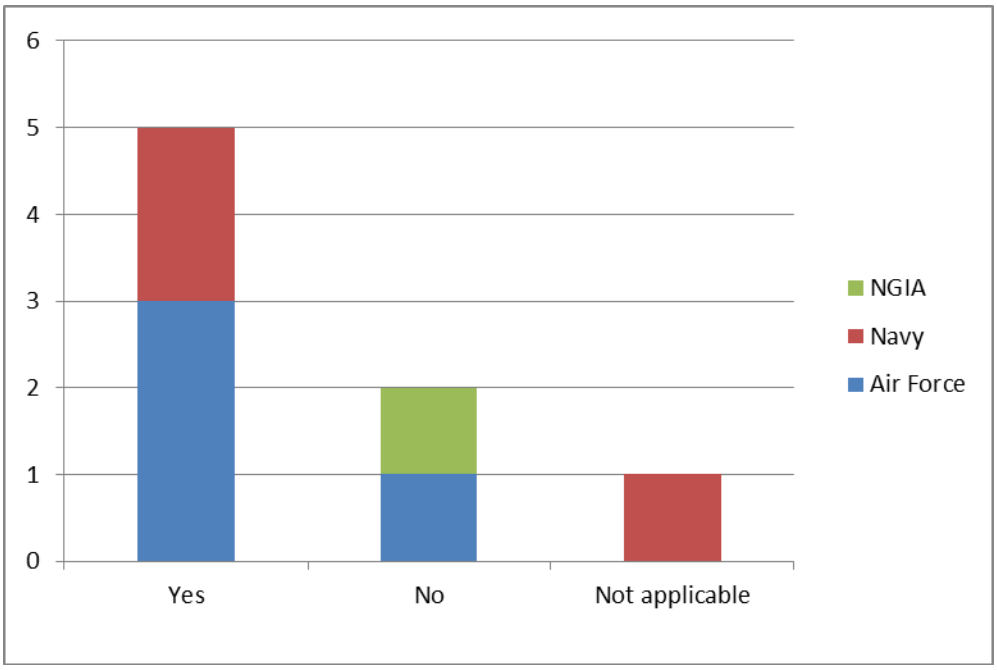

Figure 10. Response by Service to Commercial Pilot Program (CPP)–Identification of Projects for Rapid Transitioning Through CPP

4. Analysis

On the whole, it can be concluded that most agencies, which created the CPP, came up with some sort of process for the identification of projects for rapid transitioning into the Commercialization Phase of the SBIR/STTR program. The negative responses to this question need to be viewed in the context of the previous question, namely, that the respondents either did not create the CPP program in their organization, mixed up the CPP with other transition assistance programs, or were not clear about legislative requirement.

To understand these results, one must look at the various CPP programs for their approach to identification. The Air Force approaches SBIR project identification for their CPP program using two approaches; technology needs identified by an Air Force acquisition organization and technology needs identified by a single major contractor. In both approaches "data mining" of DoD Phase II databases occur by Air Force experts at the various Air Force Product Centers and Air Force Research Lab. The experts look for promising candidates based on Program Executive Office needs. The results of the search

are then provided to major contractors of Air Force acquisition organizations, which then conduct interviews with the various small businesses during Industry Interchange Workshops. Then the technical points of contact and the major contractors identify promising SBIR projects for inclusion into the CPP.[44]

The Navy approach involves the Program Executive Office, the System Command SBIR Program Manager and a Technical Monitor to decide which Phase II programs get included into their CPP program. Each System Command has its own identification processes relating to their areas of interest.[45] Since 2008, the Navy has also participated with the Air Force in Joint DoD Component Industry SBIR CPP Technology Interchange Workshops though recent resource constraints makes Navy attendance in the future questionable.[46]

The responses also relate to how each service conducts initial topic selection for SBIR program. In earlier studies conducted by the RAND Corporation and reported in a 2009 Inspector General report, the approaches to topic generation, and as a result, projects, of the various military departments was discovered and analyzed. According to the report, the Air Force and the Army "generated a majority of their topics in laboratories, whereas the Navy generated a majority of its topics through the acquisition program offices."[47] The Inspector General's report also concurred with the 2007 National Research Council report titled "SBIR and the Phase III Challenge of Commercialization" that the Navy approach to topic generation "expedited the transition to commercialization."[48] Based on the current approach of the Army and Air Force, while there may have been improvements in the transition process of the respective CPP

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[44] Richard Flake, *Air Force Small Business Innovation Research (SBIR)--Commercialization Pilot Program (CPP)* PowerPoint presentation, 2007, http://www.zyn.com/sbtcevents/rt072/presentations/Flake.pdf.

[45] Navy Small Business Innovation Research.

[46] Wright Patterson Air Force Base, Factsheet, http://www.wpafb.af.mil/library/factsheets/factsheet.asp?id=15879.

[47] Inspector General Report D-2009-048, 10.

[48] Ibid., 9.

programs, the Navy model appears to provide for greater acquisition program input with regard to generating topics that will be successfully transitioned into DoD acquisition phases.

5. Commercial Pilot Program (CPP)–Certification of Technology Projects for Assistance by Department Secretary

With a response of 50%, most respondents answered that they did not know whether their organization required that SBIR Phase I and Phase II projects be certified by the Secretary of Defense or the Secretary of a military department that the project's successful transition to Phase III and into the acquisition process is expected to meet high priority military requirements of the relevant department as a precondition for receiving assistance under the CPP. (See Figure 11)

More than a third, 37.5%, responded that their organization never required the certification. Only 12.5% stated that their organization frequently requires the certification.

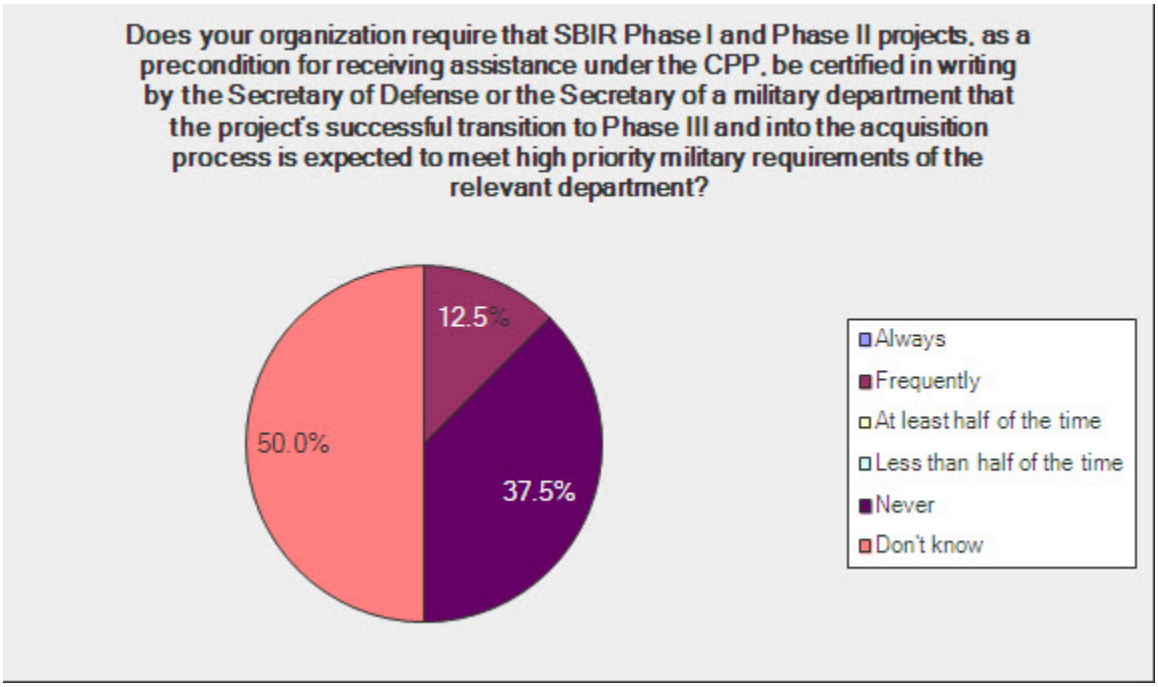

Figure 11. Response to Commercial Pilot Program (CPP)–Certification of Projects by Department Secretary

6. Analysis

A casual look at the responses from the various services to this question would indicate a large portion of the respondents organization either do not know if the organization is keeping this requirement or that they never have keep it (Figure 12).

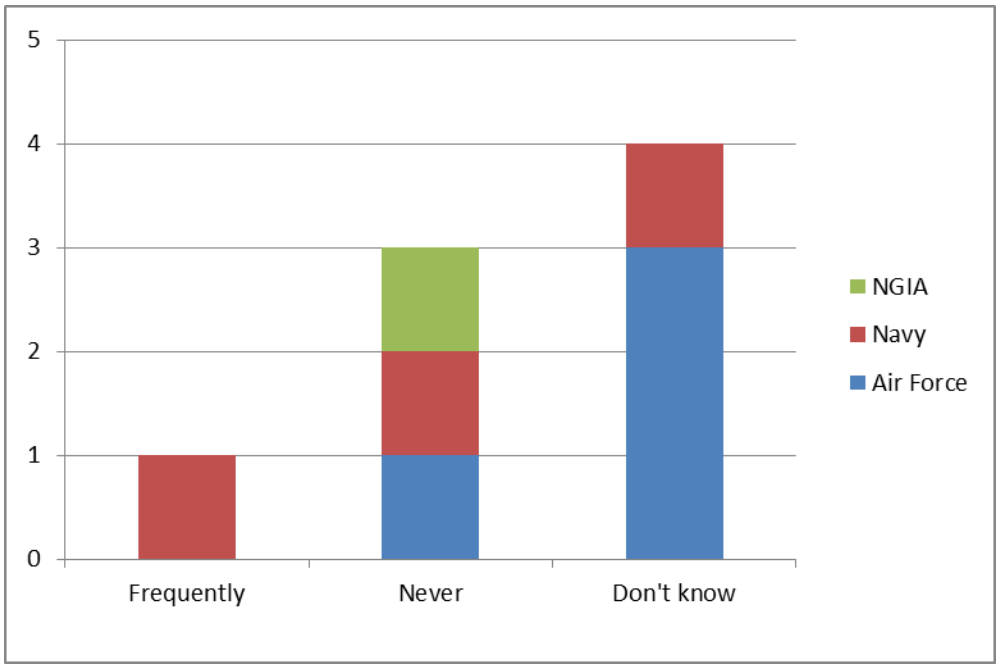

Figure 12. Response by Service to Commercial Pilot Program (CPP)–Certification of Projects by Department Secretary

When one removes the respondents who previously answered “never” or “don’t know”/not applicable” to the question of CPP creation from the results, one is left with clearer picture of the situation (Figure 13).

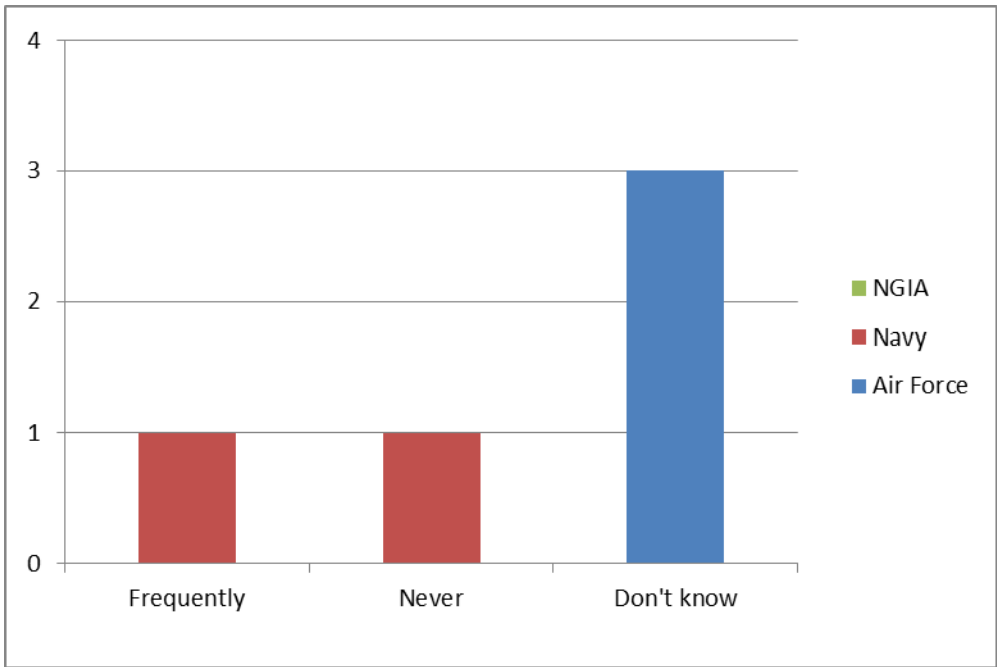

Figure 13. Response by Service to Commercial Pilot Program (CPP)–Certification of Projects by Department Secretary—Adjusted for Removal of Non-CPP Responders

This would indicate that the Air Force organizations, which are the most frequent respondents confirming creation of the CPP, do not know if their military department has implemented the requirement for certification in writing required in Section 252(y)(2).

One also sees the Navy being split on whether this is done in their department, with one respondent answering “frequently” and the other answering “never.”

These responses indicate that there is another area for further research needing to be done to determine the type and nature of the responses to this question.

As was previously outlined and which will be further expanded upon in Section D1 of this paper, the Air Force, Army, and certain Navy organizations utilize contractors, such as MILCON Ventures Partners, MacAulay-Brown, Wilcor and Dawnbreaker to assist in SBIR and CPP related projects at various phases. Some of these firms assist to the extent of helping government personnel to determine whether specific small business firms are able to participate in providing proposals to announced topics at Phase I and whether the Phase I and Phase II firms will be allowed to participate in the CPP projects.

In these instances, these contractors do a "vetting" of technology needs and technology SBIR firms. The reason for the department secretary's certification as required in Section 252 was to make certain that projects seeking to progress though the CPP process into commercialization phases met the "high priority military requirements" of each department.[49] Whether contractors should be involved in making this determination is at the very least questionable since delegation of this function to contactors increases the potential for misalignment between military requirements and CPP assistance funds and make the CPP less predictable for small business. As the results to this question show, this requirement is not being met. Further research into the role of contractors in the determination of project approvals needs to be addressed.

7. Commercial Pilot Program (CPP)–Input by Program Mangers or Program Executive Officers

With a response of 75%, a majority of the respondents answered with a affirmative to the question as to whether their organization had formal processes or procedures for requiring Program Mangers or Program Executive Officers to provide input concerning SBIR topic generation and on accelerated integration of SBIR projects into the acquisition programs. (See Figure 14)

[49] Section 252 (y)(2).

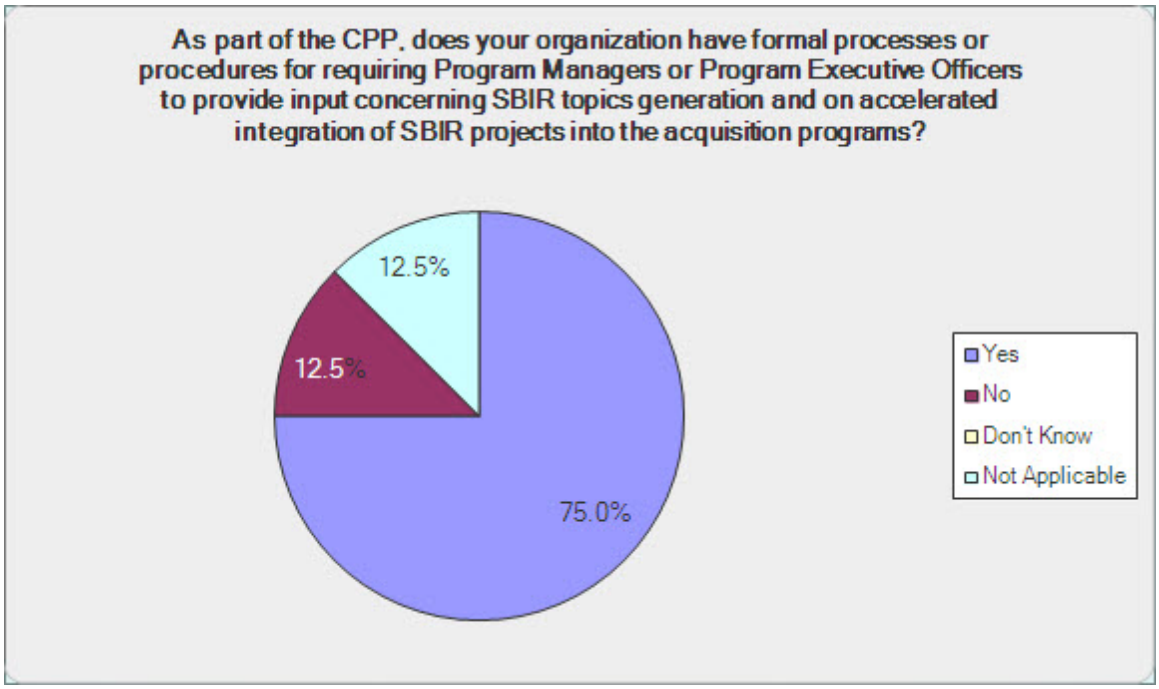

Figure 14. Response to Commercial Pilot Program (CPP)–Input by Program Mangers or Program Executive Officers

The last quarter was evenly split between the respondents, which answered in the negative, that their organization did not have the processes or procedures in place, or they answered that creation of the processes or procedures was "Not Applicable" to their organization.

8. Analysis

The responses by service to this question (Figure 15) indicate whether their organization is in adherence to the requirements of the statute. However, the NGIA respondent who had previously indicated that their organization had not created the Commercialization Pilot Program still answered affirmatively that they had formal processes or procedures for Program Manager or Program Executive Officer input as part of the CPP.

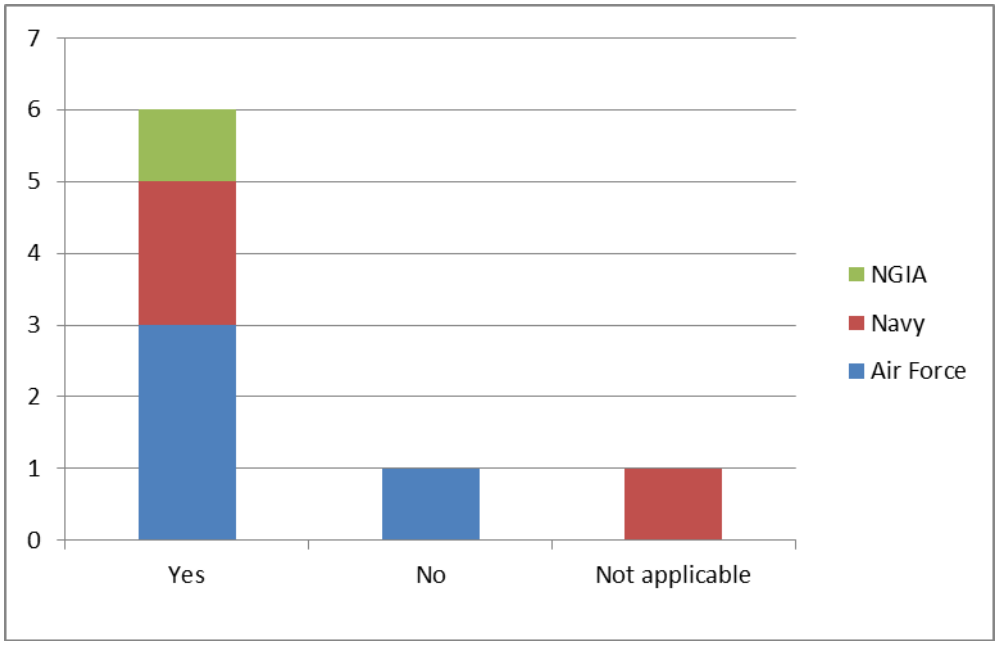

Figure 15. Response by Service to Commercial Pilot Program (CPP)–Input by Program Mangers or Program Executive Officers

Even when taking into account the seemingly erroneous response discussed above, the conclusion here is that the organizations are largely, but not always involving the PEO and PMs in topic generation within the context of the CPP. This is in contrast to the responses given to the question regarding PEO and PM involvement in topic generation in general reported in Chapter V-B.2 of this document. In that section, recall that over 50% of the respondents answered that involvement of the PEO and PM was "not applicable."

The involvement of Program Executive Officers and Program Managers is critical in the topic generation and identification of projects into commercialization. In a 2009 study entitled *An Assessment of the Small Business Innovation Research Program at the Department of Defense*, the National Academies of Sciences identified that "active championing (of SBIR projects) by Program Executive Officers seems to be a critical ingredient in Phase III success."[50] The study also suggests having senior managers insist

[50] National Academies of Science, An Assessment of the Small Business Innovation Research Program at the Department of Defense, 182.

that all on having their program managers "integrate SBIR fully into their acquisition programs."[51] These two recommendations represent a cultural change component, which Section 252 tried to achieve by requiring their PM/PEO input in identifications of areas of effort and by reporting out of the activities of the Program Managers, Program Executive Officers, and prime contractors in the form of the annual Evaluative Report on the CPP.

Another issue, which involves Program Managers and Program Executive Officers, is that of topic generation. According to the Government Accountability Office report on *Space Acquisitions: Challenges in Commercializing Technologies Developed under the Small Business Innovation Research Program*, small businesses which were involved with SBIR projects in DoD space related technologies, related that there was limited "pull" from the acquisition programs.[52] According to the report, three reasons were given for this lack of "pull;" DoD topics in which there is no validated requirement, short tenure among DoD officials responsible for progress and lack of SBIR knowledge among DoD officials.[53] Certainly, topic generation by the Program Mangers and Program Executive Officers should include validated requirements and be within the ability of the senior leadership to enforce. Lack of SBIR knowledge is being addressed through more SBIR related training. Still, the issue of "pull" is again related to changes in organizational culture, which apparently remains difficult to accomplish within DoD.

[51] National Academies of Science, An Assessment of the Small Business Innovation Research Program at the Department of Defense, 183.

[52] *Space Acquisitions: Challenges in Commercializing Technologies Developed under the Small Business Innovation Research Program*, 23.

[53] Ibid.

D. CONTRACTOR INFLUENCE ON SELECTION OF PROJECTS WITHIN THE COMMERCIALIZATION PILOT PROGRAM (CPP)

1. Commercial Pilot Program (CPP)–Contractor Influence

With a response of 83.3%, most respondents answered that their organization did not make decisions to select SBIR Phase I or Phase II projects for CPP assistance based on or influenced by contractors supporting the CPP program for the organization. (See Figure 16)

However, 16.7% stated that their organizations decisions to select SBIR Phase I or Phase II project was in some way influenced by one or more contractors supporting the CPP program for the organization.

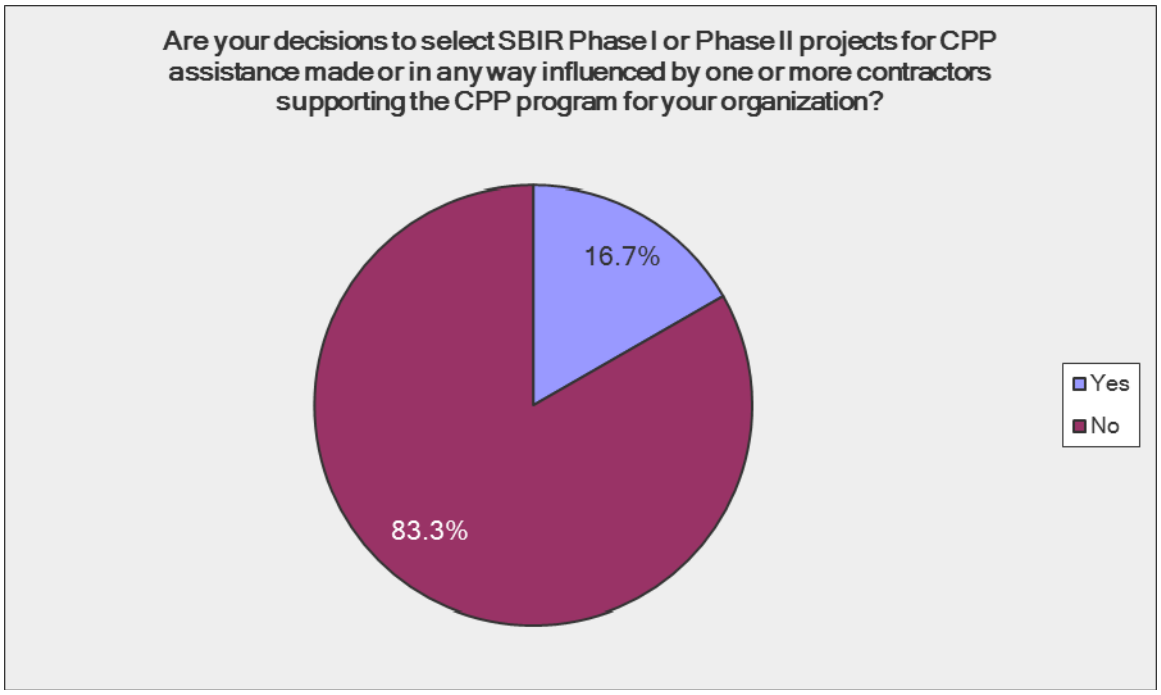

Figure 16. Response to Commercial Pilot Program (CPP)–Contractor Influence

With the exception of one respondent from the Air Force, all other services, including all other Air Force respondents, indicated that contractor influence on decisions to select Phase I or II projects for CPP does not occur. (See Figure 17)

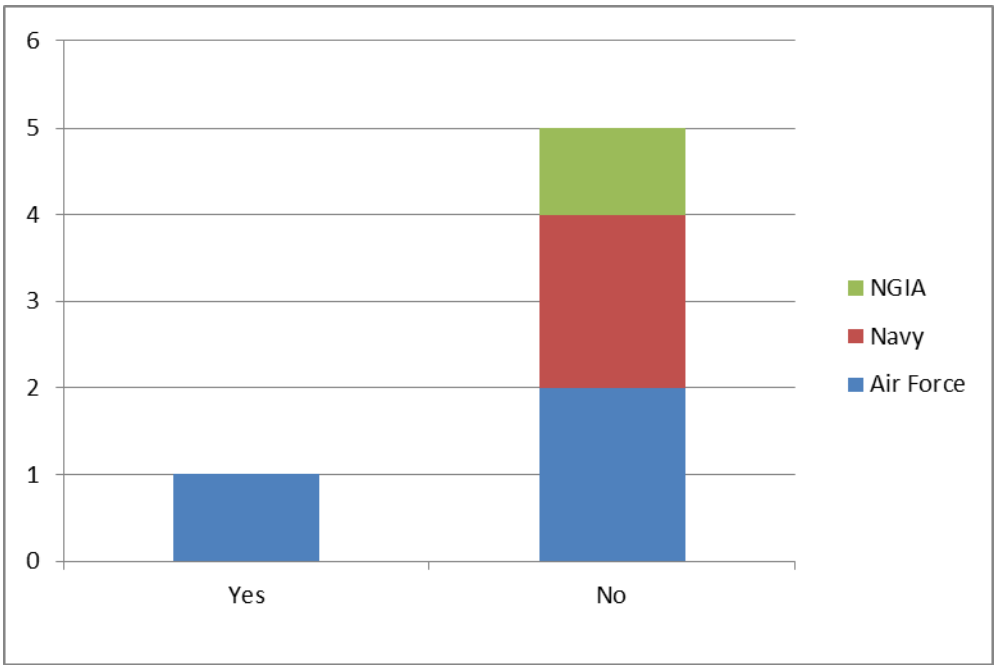

Figure 17. Response by Service to Commercial Pilot Program (CPP)–Contractor Influence

2. Analysis

This finding is in contrast to the publically announced role of contractors in the various CPP programs. With the passage of the SBIR Reauthorization Act of 2000, Public 106-554, which amended Section 9 of the Small Business Act (15 U.S.C. 638), Federal agencies were allowed to enter into an agreement with a vendor to provide "technical services" The text of the section is below:

> (q) Discretionary technical assistance
>
> (1) In general
>
> Each Federal agency required by this section to conduct an SBIR program may enter into an agreement with a vendor selected under paragraph (2) to provide small business concerns engaged in SBIR projects with technical assistance services, such as access to a network of scientists and engineers engaged in a wide range of technologies, or access to technical and business literature available through on-line data bases, for the purpose of assisting such concerns in—

(A) making better technical decisions concerning such projects;

(B) solving technical problems which arise during the conduct of such projects;

(C) minimizing technical risks associated with such projects; and

(D) developing and commercializing new commercial products and processes resulting from such projects.

(2) Vendor selection

Each agency may select a vendor to assist small business concerns to meet the goals listed in paragraph (1) for a term not to exceed 3 years. Such selection shall be competitive and shall utilize merit-based criteria.[54]

Using the text of the law as a standard, the role of contractors in the CPP program can be examined. For example, within the Army, MILCOM Venture Partners is a firm, which the Army selected to oversee their CPP implementation. The following information was found on their website and describes their role in the Army CPP program.[55]

> MILCOM Venture Partners (MILCOM) was selected as the Army's contractor to help manage the CPP, and will: 1) review current SBIR Phase II projects and recommend approximately 25 projects for participation in CPP; 2) provide assistance intended to accelerate technology transition and commercialization to the projects selected for CPP participation; and 3) recommend the amount of additional funding each participating SBIR Phase II project will be allocated from the $15 million CPP fund. In making recommendations for participation in CPP, the following characteristics will be given significant consideration by MILCOM:
>
> 1. The Phase II technology meets a high priority Army requirement;
> 2. The technology can be rapidly transitioned to Army acquisition and/or a commercial product; and,
> 3. Transition to military or commercial products will provide a significant financial return on the investment made in the technology by the SBIR Program, in the form of non-SBIR investment in such technology and product revenue.

[54] Cornell University Law School, http://www.law.cornell.edu/uscode/html/uscode15/usc_sec_15_00000638----000-.html#FN-1.

[55] MILCOM Venture Partners, http://www.milcomvp.com/cpp/index.shtml.

The Air Force has contracted with MacAulay-Brown, Inc. (MacB) to provide a lead role, variously described as that of SBIR/STTR Program Manager[56] or more recently, as SBIR/STTR Project Lead.[57] The role of MacAulay-Brown was described in their press release at the time of the contract award.

> The Government-MacB Team will focus on improving the process of identifying and developing topics that address urgent warfighter needs and transition successful results to acquisition programs while strengthening awareness, involvement and advocacy of key S&T customers/stakeholders.[58]

The Navy also involves contractors to assist in their CPP program. The contractor firms Dawnbreaker Inc. and Wilcor have been contracted with to provide program management support, technology transition and risk management to firms, which have SBIR/STTR projects. The firm's involvement in CPP is outlined below.

- Willcor is under contract to the Navy to assist companies with the use of Technology Risk Identification & Mitigation Software (TRIMS) for SBIR, a web based tool for risk assessment management, the performance of independent assessments, and assistance in developing risk mitigation strategies and plans.
- Both Willcor and Dawnbreaker are under contract with the Navy to provide assistance to SBIR firms in planning their transition strategies.
- Both Willcor and Dawnbreaker are under contract to assist firms with identifying issues, preparing manufacturing plans, and conducting Manufacturing and Production Readiness assessments.
- Technology Readiness Assessments are used to assist firms in determining the development status of their technology (TRL), as well as conformance to requirements. Willcor is under contract to the Navy to provide these assessments.[59]

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[56] Air Force Presentation given at 2009 Beyond Phase II Conference, http://www.beyondphaseii.com/2009/presentations/Wednesday/01_CPP_Service_Briefings/c_Services_Briefings-Flake_(Air_Force).pdf.

[57] Air Force SBIR, STTR, http://www.afsbirsttr.com/Poc/Pocs.aspx.

[58] MacB.com, http://www.macb.com/about-us/company-news.php.

[59] The Navy Commercialization Pilot Project (CPP), http://www.navysbir.com/Navy_CPP-09.pdf.

Dawnbreaker's role within the Navy's Naval Air Systems Command (NAVAIR) CPP program includes having "Dawnbreaker to provide Program and Technology Transition Management Support to the NAVAIR SBIR Program Office to implement a CPP, which assists the NAVAIR Program Executive Officers (PEOs) and NAVAIR Acquisition Program Management Offices (PMAs) in identifying SBIR topics that meet the needs of the war-fighter, have the potential for rapid transition and to execute their transition from Phase II to Phase III and insertion into a Program of Record."[60]

Dawnbreaker is also the major contractor in the Navy's Technology Assistance Program (TAP). This program assists Phase II SBIR/STTR awardees with "the services of a business acceleration manager, a market researcher, and others to accelerate the transition of their technology. This is accomplished through the application of a proven process and deliverables, developed collaboratively by the small business and the Navy TAP team."[61]

It is clear that there is significant contractor involvement in the CPP programs at the various services. What is not clear however is whether any conflict of interest with Federal Acquisition Regulations provisions and the various programs exist. This is significant as (FAR) Section 9.5 prohibits a contractor from having consultant conflicts of interest. FAR Section 9.505-1 specifically prohibits a contractor, which has "provide(d) systems engineering and technical direction for a system but does not have overall contractual responsibility for its development, its integration, assembly, and checkout, or its production…" from having a contract awarded to them for the system or to be a sub-contractor or consultant to a supplier of the system or any major components. While the scope of the involvement of the contractors outlined above does not appears to be in conflict with the above quoted section, there may be some unintentional abuses and possibly the role, which contractors are actively playing exceeds that of the definition of "technical assistance" as was outlined in 15 U.S.C.638.

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[60] Dawnbreaker, http://www.dawnbreaker.com/defense/navair-cpp.php.

[61] Dawnbreaker, http://www.dawnbreaker.com/defense/navy-tap.php.

Additionally, Phase III contract award "gatekeeping" by technical assistance vendors, especially venture capitalists, also appears to constitute inherently governmental functions per FAR Subpart 7.5 and Part 19, such as determinations of capacity and responsibility, which are the province of the Small Business Administration's Certificate of Competency program, contract funding and source selection activities, which are the province of Federally-warranted contracting officers, and administration of strategies, subcontracting plans, and incentives for small business participation, which are properly done by Federal small business specialists. The conclusion here is that this is an area where more research should be conducted.

E. CPP INCENTIVES AND INITATIVES

1. Incentivizing Within Commercial Pilot Program (CPP)

With a response of 66.7%, most respondents answered that their organization did not make develop or deploy acquisition incentives to accelerate the transition of SBIR/STTR technologies into the acquisition process though the Commercial Pilot Program. (See Figure 18)

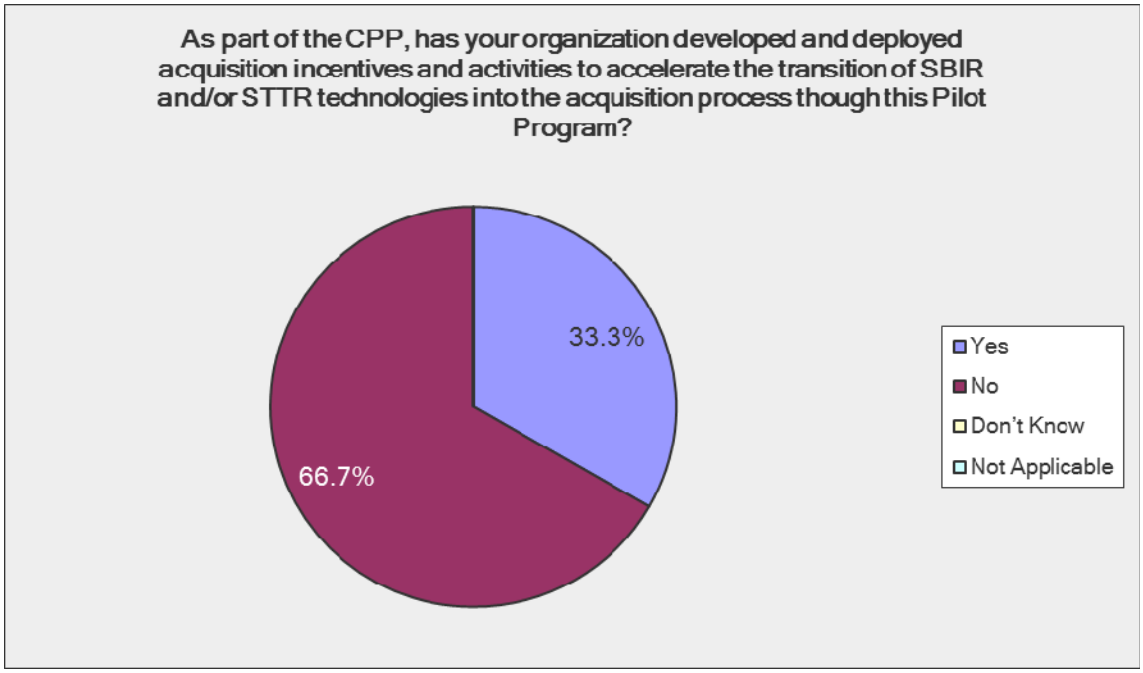

Figure 18. Response to Acquisition Incentivizing Within Commercial Pilot Program (CPP)

A third, 33.3%, indicated that their organization did develop and deploy acquisition incentives to accelerate the transition of SBIR/STTR technologies into the acquisition process as part of the CPP.

2. Analysis

The two Navy respondents, which had confirmed creation of the CPP, also were the only organizations, which responded that they used incentives within the Commercialization Pilot Program. The Air Force respondents indicated that they did not develop any acquisition incentives even though this is well within the scope of the SBIR/STTR program and must be reported to Congress each year. (See Figure 19)

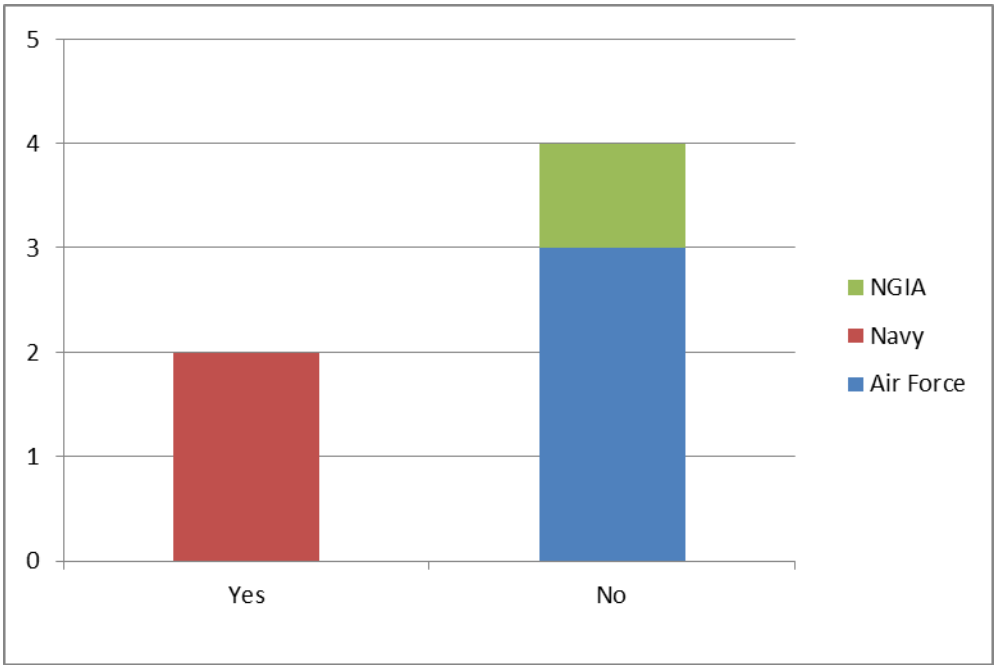

Figure 19. Response by Service to Acquisition Incentivizing Within Commercial Pilot Program (CPP)

The subject of incentives was a topic of great interest at the "SBIR and the Phase III Challenge of Commercialization" symposium held on June 14, 2005. The symposium was convened by the National Academies of Science and focused on the

commercialization of SBIR funded innovation projects at DoD and NASA.[62] The term "incentives" was used to address methods of change techniques with the various targets being government managers at multiple levels, prime contractors, and small businesses. The ideas suggested took the form of programmatic changes to funding, training, risk reduction (for all three entities, small business, prime contractor and government), alignment with existing projects, and education outreach of to inform regarding the SBIR program. The importance of incentives was stressed repeatedly by the participants to this symposium and within the report of the proceedings this is evidenced by the following two quotes,

> In this era of globalization, optimizing the ability of small businesses to develop and commercialize new products is essential for U.S. competitiveness and national security. Developing better incentives to spur innovative ideas, technologies, and products—and ultimately to bring them to market—is thus a central policy challenge.[63]

> To capitalize on SBIR's potential, both better information (for small companies and large prime contractors) and supportive incentives are necessary.[64]

Section 252 utilizes the term "incentives" specifically in paragraph (y)(5) in regard to the reporting of such in the annual evaluative report of the Secretary of Defense to the Senate committees on Armed Services and Small Business and Entrepreneurship and House committees on Armed Services and Small Business, but the Congressional Guidance Letter gives further instruction in regard to the intent of Congress to have DoD consider issuing "binding directives, contract clauses, or regulatory amendments through the Defense Federal Acquisition Regulation Supplement (DFARS) to facilitate the requisite incentives."[65]

In the 2006 SBIR CPP Report to Congress, the Department of Defense stated their intention to utilize incentives:

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[62] *SBIR and the Phase III Challenge of Commercialization: Report of a Symposium*, xv.

[63] Ibid., 3.

[64] Ibid., 28.

[65] Full text is available in Appendix C.

> The Department is exploring a range of incentives to stimulate the transition of SBIR funded technology for promulgation throughout the Department via appropriate mechanisms. Initiatives under consideration include: extension of SBIR Phase III permissive sole-source authority to SBIR subcontracts, reinforcement of SBIR Phase III sourcing authority and data rights, formal consideration of SBIR technology transition planning during acquisition review processes, favorable treatment of proposals which employ SBIR technologies or partnerships, use of incentive or award fees for SBIR-technology sourcing; wider employment of SBIR Phase III contracts toward meeting small business sourcing goals, to include possible multiple small business credits; and encouraging individual performance bonuses for personnel affecting SBIR technology transition. The new National Security Personnel System
>
> (NSPS) in the process of being rolled-out across the Department is well suited to implement this type of performance-based compensation. It will be up to each participating component and their subcomponents to take advantage of this opportunity to set output-based goals to measure this dimension of performance for relevant program officials while ensuring the integrity of source selection activities.[66]

The lack of reported incentive usage would indicate a missed opportunity by the services. The different approaches to incentives, as well as the level of utilization can be found in Table 4.

3. Incentivizing Within Commercial Pilot Program (CPP)–Types of Incentives Deployed

Since the Navy respondents were the only ones, which indicated the usage of incentives, all of the information in Table 4 is related to usage of the incentives within the Navy organizations, but the table also includes all of the types of incentives, which could be utilized.

[66] Under Secretary of Defense ((AT&L)/OSBP Report for Fiscal Year 2006 Department of Defense Small Business Innovation Research Program Commercialization Pilot Program (CPP), Washington, DC, January 2007, 13.

As shown in Table 4, the most utilized incentives were:

- Educational and business development assistance to SBIR firms focused on commercialization in Federal and dual-use markets
- Outreach and advocacy with large prime contractors as well as defense acquisition and program management officials.

In addition, while having a high utilization, not used as frequently as the two above:

- Contract clauses or regulatory provisions expressly confirming SBIR data rights protections at Phase III at the prime contracting and subcontracting levels. Such clauses are set forth in FAR 52.227-20.

Table 4. Response to Acquisition Incentivizing Within Commercial Pilot Program (CPP)–Types of Incentives Deployed

Which type of incentives and activities did your organization develop and deploy as part of the CPP? (Select all that were utilized and indicate frequency of use)							
Answer Options	**Always**	**Frequently**	**At least half of the time**	**Less than half of the time**	**Never**	**Response Count**	**Utilization**
a. Educational and business development assistance to SBIR firms focused on commercialization in Federal and dual-use markets	1	1	0	0	0	2	Most utilized
b. Outreach and advocacy with large prime contractors, as well as defense acquisition and program management officials.	1	1	0	0	0	2	Most utilized
c. Contract incentive clauses and bonuses to large prime contractors that integrate SBIR and/or STTR technologies	0	0	0	1	0	1	Least utilized
d. Mentor-protégé arrangements for the benefit of SBIR and/or STTR firms	0	0	1	1	0	2	Some utilization
e. Dedication of specific acquisition dollars for integration of SBIR and/or STTR technologies into major defense systems	0	0	1	1	0	2	Some utilization
f. Contract clauses or regulatory provisions expressly confirming SBIR data rights protections at Phase III at the prime contracting and subcontracting levels	1	0	1	0	0	2	Most utilized
g. Performance incentives to acquisition and program management personnel for developing and execution rapid commercialization of SBIR technologies through government contracts and subcontracts	0	1	0	1	0	2	Some utilization

In contrast, the least utilized incentive method was that of contract incentive clauses and bonuses to large prime contractors that integrate SBIR and/or STTR technologies.

An area of additional research might therefore be the use of contract clauses or incentives to increase the transition of projects into Phase III as large prime contractors specially requested in the National Academies of Science SBIR Symposium.[67] It is also worth studying whether funding currently spent in outreach and education may be more effective when redirected to these types of incentives.

[67] *SBIR and the Phase III Challenge of Commercialization: Report of a Symposium*, 27.

VI. CONCLUSIONS AND RECOMMENDATIONS

The overall conclusion of this paper is that while the Department of Defense began implementation of the DoD SBIR CPP program and other Section 252 SBIR/STTR reforms, progress is uneven. Specifically, Military Departments (MILDEPs) and DoD agencies participating in SBIR and STTR programs have not uniformly conformed to the mandatory Section 252 reforms. When the Departments of Defense, Army, Navy, and Air Force implemented the optional Commercialization Pilot Program, they commonly used the CPP funds to hire business development and venture capital contractors as transition assistance advisers. Although transition assistance advising is recognized by the Congressional Guidance Letter as valuable form of assistance, the DoD and MILDEPs seemed to disregard several other CPP elements that were expressly spelled in the statute. For instance, the departments have largely not fulfilled the condition of Secretarial certification of high military priority before technologies can qualify for CPP assistance, and have declined to implement the CPP incentive authorities to the maximum extent practicable. Unquestionably, the CPP informs the DoD acquisition community about valuable SBIR technologies and helps SBIR firms engage in planning for SBIR technology insertion within DoD. However, as currently implemented, the CPP is not likely to significantly streamline the Phase III transition process, to change the culture of major acquisition program offices with regards to SBIR, to reduce technology insertion risk, or to incentivize leading prime contractors to utilize SBIR firms in major defense systems. Legislative reforms are needed to rebalance and strengthen the CPP and other Section 252 reforms.

A. ANSWERS TO RESEARCH QUESTIONS

1. Alignment With DoD Research Plans

The conclusion we reach to the question as to whether the military services have aligned their SBIR/STTR topics with DoD research plans, which would include PM/PEO inputs to couple acquisition focus with research needs and have these certified by the respective military secretaries is that this has not occurred at all. This is the case even

though the Section 252 legislation and Under Secretary of Defense SBIR policy requires that this occur. We are left with trying to determine an explanation why this could have been the case, and taking a positive perspective on this subject, suggest that either there is a level of ignorance of the statue and policy, which can be remedied by education and management actions, or that the respondents just did not know the answer to the survey questions. On the other hand, this may also suggest that there is resistance in the DoD organization to taking a new approach to topic creation. This in turn, indicates a challenge to an organization's culture and which will be more difficult to change, but not impossible, when combined again with education and a strong influence from upper levels of management. In any case, the responses to this question would indicate that opportunities for further research exist in trying to determine why the respondents answered in the way they did and affect change leading to alignment.

2. Commercialization Pilot Program

The conclusion we reach as to whether the Commercialization Pilot Program was created and was conducted within the requirements of Section 252 is a qualified yes. The services reported, and documentary evidence exists for the Army, which did not participate in the survey, that there has been a CPP created in each of the major military services and that there is largely input by Program Mangers/Program Executive Officers, in the selection of SBIR/STTR projects to be selected for inclusion in the CPP. The overall implementation of the Commercialization Pilot Program was positive, but suffered from the seeming ignorance of the Secretarial certification reporting requirements of the legislation, the potential inappropriate use of contractors resulting in their performance of roles, which are governmental functions, and the low utilization of incentives. These findings were the negative aspects of the answer. Those services, which did implement the CPP seemed to pick and choose which requirements within the legislation they would implement.

As mentioned above, our research has shown that there had been contractors performing some of the functions that were delegated to the Department Secretary including the certification process to determine which projects are to be given assistance.

Contractor participation in the certification process and the approach to use contractors as "gate-keepers" within SBIR Phase I and II projects shows that contractor influence in those military service's SBIR/STTR CPP programs is organic perhaps not by design, but nevertheless is present throughout. This may create issues in the CPP decision making process leading to misalignment of CPP resources. We suggest that additional research be performed to look at this issue and to make certain governmental functions are being performed by the proper government authorities, as well as to erect barriers to potential areas of conflict of interest.

Our research also showed the lack of incentives being utilized within the DoD SBIR/STTR CPP. As was noted in section E.1 of this report, in the Department of Defense report to Congress on the Commercialization Pilot Program Report for Fiscal Year 2006, DoD stipulated that it would undertake an exploration of the use of incentives to encourage the transition of SBIR technologies throughout the DoD. Four-years later our research has determined that incentive use is almost nonexistent and shows that incentives usage should be emphasized or re-emphasized to the services. This is an area in which more research should be conducted to ascertain the apparent resistance of the services to incentivizing SBIR participants.

3. Promotion of Manufacturing Innovation

Our survey did not succeed in collecting responses to how the services and DoD in general performed the implementation of Executive Order No. 13329. What we did find by doing literature review shows that the services have posted plans on how to encourage manufacturing in their respective SBIR/STTR programs at publically available websites. The Executive Order 13329 webpage on the DoD SBIR/STTR site lists links to the Army's, Navy's, Air Force's and DARPA's E.O. 13329 Manufacturing Innovation Plans.[68]

[68] U.S. Department of Defense, Small Business Innovation Research, Small Business Technology Transfer, http://www.acq.osd.mil/osbp/sbir/execorder/index.htm.

This report does not make any conclusions regarding these efforts and suggests that further research be conducted to ascertain compliance with Section 252 and Congressional intent in that regard.

4. A Final Observation

As we went about compiling our findings for inclusion in this section, it seems then that a possible reason for the seeming disconnect between some of the specific items mentioned in the legislation, such as the creation of the CPP, and the intent of Congress as outlined in the Letter of Congressional Intent, such as the stipulation of certain types of incentives and the actual implementation may be due to the lack of the dissemination of the Letter of Congressional Intent to the respective services Secretaries. On May 16, 2006 the letter was written to the Honorable Kenneth J. Kreig, then the Undersecretary of Defense for Acquisition, Technology, and Logistics, and requested a meeting by June 16 to discuss how the DoD was planning on implementing Section 252 and requested a written status be presented at that meeting. There is no evidence which suggests that the meeting occurred and that written status was provided. Mr. Kreig announced his resignation on June 6 ,2007, effective July 20, of the same year. What level of circulation the letter received initially and subsequently is unknown, and while speculative, we suggest that this may be one possible reason, but not the only possible one, as to why the "disconnect" may have occurred. Additional research may be able to determine whether this suggestion is correct, or as an alternative, the complete intention of Congress in regard to the desired outcomes and means to attain those outcomes, could be spelled out specifically in new legislation.

APPENDIX A. RESEARCH SURVEY

1. Introduction

Welcome to the Naval Post-graduate School Small Business Innovation Research/Small Business Technology Transfer survey.

This survey is designed to collect information regarding the implementation of Section 252 of the FY2006 Defense Authorization Act. This section dealt specifically with Congressional intent to expand the success of Phase III SBIR/STTR efforts in the Department of Defense and other agencies.

A major portion of Section 252 is the requirement for agencies to develop and conduct Commercialization Pilot Programs with the end goal to have a more effective SBIR commercialization approach.

The survey you are about to complete is anonymous. No personal information is kept and no personally identifiable information is asked for. We do ask that you provide the organization you represent as part of the survey however.

The results of this survey will be shared with decision makers in the Office of the Secretary of Defense, the SBIR Program Office, and other agencies.

For your review, a copy of the Defense Authorization Act of 2006 can be found by copying the following address to your web browser http://www.dod.gov/dodgc/olc/docs/PL109-163.pdf

2. Organization information

1. Please select the organization you are responding for

	Organization
Select	

Other (please specify)

3. Part I. Defense Research Focus of SBIR and STTR

2. Does your organization have publicly available regulations, policies, or procedures to align SBIR and STTR research focus with the Joint Warfighting Science and Technology Plan, the Defense Technology Area Plan, and the Basic Research Plan of the Department of Defense (or use other DOD organization's publicly available regulations, policies, or procedures addressing this alignment)?

- ◯ Yes
- ◯ No
- ◯ Don't Know
- ◯ Not Applicable

3. Do the regulations, policies, or procedures identified above provide for input from Program Managers and/or Program Executive Offices in the process of determining SBIR and STTR R&D focus areas?

- ◯ Yes
- ◯ No
- ◯ Don't Know
- ◯ Not Applicable

4. Does your organization participate in a quadrennial strategic review of SBIR and STTR programs in accordance with the regulations, policies, or procedures identified above?

- ◯ In all instances
- ◯ In most instances
- ◯ In some instances
- ◯ In few instances
- ◯ Never participated
- ◯ Don't know

4. Part II. SBIR Commercialization Pilot Program

5. Has your organization created the Commercialization Pilot Program (CPP) to accelerate the transition to technologies, products, and services developed under the Small Business Innovation Research Program to Phase III, including the acquisition process?

- ◯ Yes
- ◯ No
- ◯ Don't Know
- ◯ Not Applicable

6. As part of the CPP, does your organization have formal processes or procedures for requiring Program Managers or Program Executive Officers to provide input concerning SBIR topics generation and on accelerated integration of SBIR projects into the acquisition programs?

- ◯ Yes
- ◯ No
- ◯ Don't Know
- ◯ Not Applicable

7. As part of the CPP, does your organization have formal processes or procedures for the identification of optimal SBIR Phase I and Phase II projects for rapid transitioning and related assistance through the CPP into Phase III and the acquisition process?

- ◯ Yes
- ◯ No
- ◯ Don't Know
- ◯ Not Applicable

8. Does your organization require that SBIR Phase I and Phase II projects, as a precondition for receiving assistance under the CPP, be certified in writing by the Secretary of Defense or the Secretary of a military department that the project's successful transition to Phase III and into the acquisition process is expected to meet high priority military requirements of the relevant department?

- ◯ Always
- ◯ Frequently
- ◯ At least half of the time
- ◯ Less than half of the time
- ◯ Never
- ◯ Don't know

5.

9. As your answer to the previous question is other than "always," how is the decision to provide CPP assistance to a particular SBIR Phase I or Phase II project made within your organization? (Please describe)

6.

10. Are your decisions to select SBIR Phase I or Phase II projects for CPP assistance made or in any way influenced by one or more contractors supporting the CPP program for your organization?

- ◯ Yes
- ◯ No

7.

11. As your answer to the previous question is "yes," is your CPP program supported by one or more contractor firm that is:

- ◯ a. An advisory and assistance or other supporting service contractor
- ◯ b. A venture capital firm or fund
- ◯ c. All of the above
- ◯ d. Not supported by any contractors

8.

12. As your previous answer was either "a", "b," or "c", has your organization formally and in writing:

	Yes	No
a. Prohibited the supporting contractor and any associated persons from conditioning any CPP-related assistance on acting as consultants to small firms receiving CPP assistance?	◯	◯
b. Required the supporting contractors to enter into agreements with small firms agreeing to protect their proprietary information and SBIR data rights and agreeing to refrain using the information and data received from these small firms for any purposes other than to facilitate those firms' CPP assistance?	◯	◯
c. Prohibited the contractor and any associated persons from conditioning any CPP-related assistance on investments in, or lending funds to, small firms which receive CPP assistance?	◯	◯
d. Created a process for small firms seeking CPP assistance to obtain an independent decision by government personnel on CPP participation or assistance level?	◯	◯

9.

13. As part of the CPP, has your organization developed and deployed acquisition incentives and activities to accelerate the transition of SBIR and/or STTR technologies into the acquisition process though this Pilot Program?

- ◯ Yes
- ◯ No
- ◯ Don't Know
- ◯ Not Applicable

10.

14. Which type of incentives and activities did your organization develop and deploy as part of the CPP? (Select all that were utilized and indicate frequency of use)

	Always	Frequently	At least half of the time	Less than half of the time	Never
a. Educational and business development assistance to SBIR firms focused on commercialization in Federal and dual-use markets	○	○	○	○	○
b. Outreach and advocacy with large prime contractors as well as defense acquisition and program management officials.	○	○	○	○	○
c. Contract incentive clauses and bonuses to large prime contractors that integrate SBIR and/or STTR technologies	○	○	○	○	○
d. Mentor-protégé arrangements for the benefit of SBIR and/or STTR firms	○	○	○	○	○
e. Dedication of specific acquisition dollars for integration of SBIR and/or STTR technologies into major defense systems	○	○	○	○	○
f. Contract clauses or regulatory provisions expressly confirming SBIR data rights protections at Phase III at the prime contracting and subcontracting levels	○	○	○	○	○
g. Performance incentives to acquisition and program management personnel for developing and execution rapid commercialization of SBIR technologies through government contracts and subcontracts	○	○	○	○	○

11.

15. Has your agency cancelled any technology assistance program because of the CPP?

- ◯ Yes
- ◯ No

16. Does your organization have any other transition assistance programs?

- ◯ No
- ◯ Yes (please describe)

12.

17. Are small businesses eligible both from the CPP and other small business technology program at the same time?

- ◯ Yes
- ◯ No

13.

18. Does your organization have a formal process or procedure to require Program Managers or Program Executive Officers to plan for obtaining and utilizing non-SBIR funds to SBIR projects participating in the CPP?

- ◯ No
- ◯ Yes (Please Describe)

19. Did your organization impose specific reporting requirements on acquisition program managers, program executive officers, and prime contractors in order to develop the annual evaluative report to Congress on the implementation of the CPP?

- ◯ Yes
- ◯ No
- ◯ Don't Know
- ◯ Not Applicable

20. Does your organization utilizile a database to track CPP assistance?

- ◯ Yes
- ◯ No
- ◯ Don't Know

21. What is the number of small business concerns which received assistance of your organization's CPP in the following fiscal years:

FY07	
FY08	
FY09	
FY10	

22. What is the number of SBIR Phase I and II projects commercialized (transitioned into Phase III, including the acquisition process) in the following fiscal years:

FY07	
FY08	
FY09	
FY10	

23. What is the total dollar amount expended by your organization on CPP assistance in each of the following fiscal years:

FY07
FY08
FY09
FY10

24. How much of the total dollar amount expended by your organization on CPP assistance in each of the following Fiscal Years was spent on contractual incentive payments to large prime contractors?

FY07
FY08
FY09
FY10

25. How much of the total dollar amount expended by your organization on CPP assistance in each of the following Fiscal Years was spent on performance incentives to acquisition and program management personnel?

FY07
FY08
FY09
FY10

26. How much of the total dollar amount expended by your organization on CPP assistance in each of the following Fiscal Years was spent on business development/educational assistance?

FY07
FY08
FY09
FY10

27. How much of the total dollar amount expended by your organization on CPP assistance in each of the following Fiscal Years was spent on outreach and advocacy?

FY07
FY08
FY09
FY10

28. How much of the total dollar amount expended by your organization on CPP assistance in each of the following Fiscal Years was spent on venture capital fund management fees?

FY07	
FY08	
FY09	
FY10	

14. Part III. SBIR/STTR Manufacturing Innovation Incentives

29. Did your organization implement Executive Order 13329, Encouraging Innovation in Manufacturing, codified into law as part of Section 252(b)?

- ◯ Yes
- ◯ No
- ◯ Don't Know
- ◯ Not Applicable

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APPENDIX B. SECTION 252–NATIONAL DEFENSE AUTHORIZATION ACT FOR FISCAL 2006

SEC. 252. RESEARCH AND DEVELOPMENT EFFORTS FOR PURPOSES OF SMALL BUSINESS RESEARCH.

(a) IN GENERAL.—Section 9 of the Small Business Act (15 U.S.C. 638) is amended by adding at the end the following new subsections:

''(x) RESEARCH AND DEVELOPMENT FOCUS.—

''(1) REVISION AND UPDATE OF CRITERIA AND PROCEDURES OF IDENTIFICATION.—In carrying out subsection (g), the Secretary of Defense shall, not less often than once every 4 years, revise and update the criteria and procedures utilized to identify areas of the research and development efforts of the Department of Defense, which are suitable for the provision of funds under the Small Business Innovation Research Program and the Small Business Technology Transfer Program.

''(2) UTILIZATION OF PLANS.—The criteria and procedures described in paragraph (1) shall be developed through the use of the most current versions of the following plans:

''(A) The Joint Warfighting Science and Technology Plan required under section 270 of the National Defense Authorization Act for Fiscal Year 1997 (Public Law 104–201; 10 U.S.C. 2501 note).

''(B) The Defense Technology Area Plan of the Department of Defense.

''(C) The Basic Research Plan of the Department of Defense.

''(3) INPUT IN IDENTIFICATION OF AREAS OF EFFORT.—The criteria and procedures described in paragraph (1) shall include input in the identification of areas of research and development efforts described in that paragraph from Department of Defense program managers (PMs) and program executive officers(PEOs).

''(y) COMMERCIALIZATION PILOT PROGRAM.—

''(1) IN GENERAL.—The Secretary of Defense and the Secretary of each military department is authorized to create and administer a 'Commercialization Pilot Program' to accelerate the transition of technologies, products, and services developed under the Small Business Innovation Research Program to Phase III, including the acquisition process.

''(2) IDENTIFICATION OF RESEARCH PROGRAMS FOR ACCELERATED TRANSITION TO ACQUISITION PROCESS.—In carrying out the Commercialization Pilot Program, the Secretary of Defense and the Secretary of each military department shall identify research programs of the Small Business Innovation Research Program that have the potential for rapid transitioning to Phase III and into the acquisition process.

''(3) LIMITATION.—No research program may be identified under paragraph (2) unless the Secretary of the military department concerned certifies in writing that the successful transition of the program to Phase III and into the acquisition process is expected to meet high priority military requirements of such military department.

''(4) FUNDING.—For payment of expenses incurred to administer the Commercialization Pilot Program under this subsection, the Secretary of Defense and each Secretary of a military department is authorized to use not more than an amount equal to 1 percent of the funds available to the Department of Defense or the military department pursuant to the Small Business Innovation Research Program. Such funds—

''(A) shall not be subject to the limitations on the use of funds in subsection (f)(2); and

''(B) shall not be used to make Phase III awards.

''(5) EVALUATIVE REPORT.—At the end of each fiscal year, the Secretary of Defense shall submit to the Committee on Armed Services and the Committee on Small Business and Entrepreneurship of

the Senate and the Committee on Armed Services and the Committee on Small Business of the House of Representatives an evaluative report regarding activities under the Commercialization Pilot Program. The report shall include—

''(A) an accounting of the funds used in the Commercialization Pilot Program;

''(B) a detailed description of the Commercialization Pilot Program, including incentives and activities undertaken by acquisition program managers, program executive officers, and prime contractors; and

''(C) a detailed compilation of results achieved by the Commercialization Pilot Program, including the number of small business concerns assisted and the number of projects commercialized.

''(6) SUNSET.—The pilot program under this subsection shall terminate at the end of fiscal year 2009.''

(b) IMPLEMENTATION OF EXECUTIVE ORDER NO. 13329.—Section 9 of the Small Business Act (15 U.S.C. 638), as amended by subsection (a), is further amended—

(1) in subsection (b)—

(A) in paragraph (6), by striking ''and'' at the end;

(B) in paragraph (7), by striking the period at the end and inserting ''; and''; and

(C) by adding at the end the following:

''(8) to provide for and fully implement the tenets of Executive Order No. 13329 (Encouraging Innovation in Manufacturing).'';

(2) in subsection (g)—

(A) in paragraph (9), by striking ''and'' at the end;

(B) in paragraph (10), by striking the period at the end and inserting ''; and''; and

(C) by adding at the end the following:

''(11) provide for and fully implement the tenets of Executive Order No. 13329 (Encouraging Innovation in Manufacturing).'';

and

(3) in subsection (o)—

(A) in paragraph (14), by striking ''and'' at the end;

(B) in paragraph (15), by striking the period at the end and inserting ''; and''; and

(C) by adding at the end the following:

''(16) provide for and fully implement the tenets of Executive Order No. 13329 (Encouraging Innovation in Manufacturing).''.

(c) TESTING AND EVALUATION AUTHORITY.—Section 9(e) of the Small Business Act (15 U.S.C. 638(e)) is amended—

(1) in paragraph (7), by striking ''and'' at the end;

(2) in paragraph (8), by striking the period at the end and inserting ''; and''; and

(3) by adding at the end the following:

''(9) the term 'commercial applications' shall not be construed to exclude testing and evaluation of products, services, or technologies for use in technical or weapons systems, and further, awards for testing and evaluation of products, services, or technologies for use in technical or weapons systems may be made in either the second or the third phase of the Small Business Innovation Research Program and of the Small Business Technology Transfer Program, as defined in this subsection.''.

APPENDIX C. LETTER OF CONGRESSIONAL GUIDANCE

Congress of the United States

Washington, DC 20510

May 15, 2006

The Honorable Kenneth J. Krieg
Under Secretary of Defense
for Acquisition, Technology, and Logistics
3000 Defense Pentagon
Washington, DC 20301-3000

Re: Section 252 of the National Defense Authorization Act for FY2007 - Congressional Guidance and Status Reporting Request

Dear Under Secretary Krieg:

As leaders of the Senate Committee on Small Business and Entrepreneurship and the House Committee on Small Business, we write concerning the critical issue of developing and transitioning new technologies through the Small Business Innovation Research Program by the Department of Defense (DOD) and its four component military Departments. The DOD spends approximately $1.1 billion a year on SBIR Phase I and Phase II competitive, merit-based awards given directly to small innovative firms. These research investments, in turn, were commercialized through approximately half a billion dollars in DOD SBIR Phase III prime contracts as well as in subcontracts on major defense acquisition systems. Technological projects fostered by the DOD from invention to commercialization have made our Nation more secure by providing our warfighters with unmanned aerial vehicles (UAV), training simulators for operations involving urban combat and improvised explosive devices (IEDs), submarine components, and language translation aids, to name a few.

We would like to hold a meeting between your staff and the staffs of the Senate Committee on Small Business and Entrepreneurship and the House Committee on Small Business by June 16, 2006 to receive the Department's written status report concerning implementation of Section 252 of the National Defense Authorization Act for Fiscal Year 2006. We are particularly interested in the following questions:

(1) How the DOD plans to implement the new requirement in Section 252(a) for research focus of its SBIR and STTR programs?

(2) How the DOD and each military department plan to involve acquisition program managers and program executive offices in SBIR/STTR topic selection and management and to ensure that SBIR/STTR is integrated into the DOD's mission and its acquisition framework, as contemplated in Section 252(a), SBIR Commercialization Pilot Program, and Section 252(c), inclusion of testing and evaluation work as part of SBIR/STTR commercialization activity?

(3) How the DOD's and each military department's acquisition program managers and program executive officers will plan for post-SBIR/STTR funding, through the Program Objective Memoranda and other vehicles, to utilize SBIR/STTR technology

resources in their acquisition process, as contemplated by Section 252(a), SBIR Commercialization Pilot Program?

(4) How the DOD and each military department will plan for and implement the SBIR Commercialization Pilot Program, and specifically what processes these military services and defense agencies will develop and implement to ensure identification of optimal SBIR/STTR Phase I - II projects for accelerated transition through this Pilot Program?

(5) What acquisition incentives and activities will the DOD and each military department be deploying to accelerate the transition of SBIR/STTR technologies into the acquisition process through this Pilot Program?

(6) What specific reporting requirements do the DOD and each military department intend to impose on acquisition program managers, program executive officers, and prime contractors as part of the annual evaluative report to Congress contemplated by Section 252(a)?

(7) How will the DOD and each military department implement Executive Order 3329, *Encouraging Innovation In Manufacturing*, codified into law as part of Section 252(b)?

In answering these questions, we ask that you follow the following Congressional guidance on Section 252. First and foremost, this Section addresses the need for a strategic, DOD-wide review of the SBIR and the STTR programs (conducted not less than quadrennially) based on the latest research, science, and technology plans of the DOD. The review should address the research priorities of the DOD (taking into account the warfighters' needs), tie these priorities with the ongoing or anticipated acquisition programs, and also address the commercialization, manufacturing, and testing and evaluation of technologies funded through the SBIR and the STTR. The strategic review process envisioned by this provision is also intended to guard the SBIR/STTR programs at the DOD against merely serving as a funding supplement to advanced acquisition programs which are suffering from low levels of technological maturity. We expect that the quadrennial SBIR/STTR review document will be promptly shared with our committees.

With regard to incentives called for in Section 252, proceedings before the National Academies of Sciences pursuant to the Congressionally-mandated SBIR study highlighted at least four types of such incentives which the DOD must pursue: (a) educational and business development assistance to SBIR firms, uniquely focused on encouraging early focus on commercialization in Federal and dual-use markets; (b) outreach and advocacy with large prime contractors, as well as defense acquisition and program management officials; (c) legal and contractual incentives ranging from clauses and bonuses to large prime contractors that integrate SBIR technologies, to mentor-protégé arrangements for the benefit of SBIR firms, to dedication of specific acquisition dollars for integrating SBIR technologies into major defense systems; and (d) performance incentives to acquisition and program management personnel for developing and executing rapid commercialization of SBIR technologies through government contracts and subcontracts. We also wish to emphasize the especially crucial role that SBIR data rights protection, both at the prime contracting and the subcontracting levels, plays in incentivizing SBIR participation. The SBIR Policy Directive is clear that data rights protection is the obligation of each agency participating in the SBIR program. We ask that the DOD consider issuing binding directives, contract clauses, or regulatory amendments through the Defense Federal Acquisition Regulation Supplement

(DFARS) to facilitate the requisite incentives.

With regards to the evaluative report contemplated by Section 252(a), Congress intended that it would address incentives and activities undertaken by the program managers, program executive officers, and prime contractors to advance rapid commercialization of SBIR technologies. By requiring reporting on the number of small business concerns assisted (including dollars awarded towards SBIR technologies) and the number of SBIR technologies commercialized, Congress intended that the Pilot Program be extended as broadly as possible. Finally, we are specifically interested in the emphasis that the DOD intends to place on hi-tech manufacturing as part of the SBIR Commercialization Pilot Program created in Section 252(a).

In dispersing the responsibility for the Commercialization Pilot Program between the Secretary of Defense and the Secretaries of the Army, the Air Force, and the Navy, Congress intended to create a competition among the various defense agencies and the Armed Services for a more effective SBIR commercialization approach. However, as the Under Secretary of Defense for Acquisition, Technology and Logistics, you will be expected to provide the strategic direction and leadership on this important legislation to ensure that SBIR/STTR-funded technology is inserted into the DOD's and each military department's acquisition process as quickly and successfully as possible. We look forward to working with you on the successful implementation of Section 252.

Should you have any questions, please contact Max Kidalov of the Senate Committee on Small Business and Entrepreneurship at 202-224-8495, Nigel Stephens of the Senate Committee on Small Business and Entrepreneurship or Nelson Crowther of the House Committee on Small Business at 202-225-9777.

Sincerely,

OLYMPIA J. SNOWE
Chair
Senate Committee on Small Business
and Entrepreneurship

DONALD MANZULLO
Chairman
House Committee on Small Business

JOHN F. KERRY
Ranking Minority Member
Senate Committee on Small Business
and Entrepreneurship

cc: Frank Ramos, Director, Small Business Programs, Office of the Secretary of Defense

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APPENDIX D. CPP PROGRAM DESCRIPTIONS

Army CPP

The U.S. Army has established its new SBIR Commercialization Pilot Program (CPP) in response to the 2006 National Defense Authorization Act, with the purpose of increasing SBIR technology transition and commercialization success. The Army has selected MILCOM Venture Partners (MILCOM) to help manage the CPP. MILCOM will assist the government with: 1) identifying a focused set of ongoing SBIR Phase II participants for inclusion in the CPP and 2) recommending the amount of additional funding from this fiscal year's anticipated $15 million CPP allocation to support the participants' commercialization plans developed under the CPP.

The objective of this effort is to increase Army SBIR technology transition and commercialization success thereby accelerating the fielding of capabilities to Soldiers and to benefit the nation through stimulated technological innovation, improved manufacturing capability, and increased competition, productivity, and economic growth.

While technology transition to Army acquisition activities is the program’s primary focus, the civilian marketplace and commercialization opportunities cannot be ignored. The Army can gain significant value through commercialized dual-use products.

The first critical step in the CPP participant identification process is to understand each active Phase II SBIR project's potential for rapid transition and commercialization. MILCOM will begin conducting this activity through a series of progressive screening processes to ultimately identify and recommend a limited set of CPP participants. The initial data collection efforts will involve an electronic commercialization assessment form that will be delivered to active Phase II projects. At that time, we will also provide additional details regarding timing, completion of the form, and program support contacts.

It is anticipated that up to twenty-five (25) participants will ultimately participate in the CPP for 2011. MILCOM will provide these participants with guidance and assistance with commercialization and transition activities, including assistance with the production of a business plan, a transition plan and matching technologies with potential government and/or industry customers. Projects participating in the CPP must have the potential for rapid transitioning to Phase III and into the acquisition process and also be expected to

meet high priority Army requirements. Additionally, each project must have the potential for commercial use in the private sector that offers a significant financial return. (https://www.armysbir.army.mil/sbir/CPP.aspx.

Navy CPP

The Navy SBIR Commercialization Pilot Program is a dynamic, results-oriented response to the Congressional challenge to the Department of Defense in 2006 to deliver more advanced technologies - faster -- to our warfighters.

Soon after the President signed the 2006 National Defense Authorization Act in late January 2006, with its Sec. 252 mandate that the military services create SBIR Commercialization Pilot Programs, the Navy started to develop a strategy for CPP practice among its System Commands that would provide needed assistance and incentives to participants in the "technology transition stream." Shortly after OSD provided official CPP guidance in June 2006, Navy formally kicked off its 2006 pilot CPP effort. In concert with Navy planning, CPP target participants included small firms, Navy program offices, prime contractors and others. 2006 Navy CPP initiatives, modeled to each System Command's needs, focused on mitigating transition risks for high-priority technologies and integrating Navy resources in its diverse communities of interest.

Navy CPP closely mirrors Congressional intent in Sec. 252 of the 2006 National Defense Authorization Act:

- Accelerate and/or improve transition of SBIR-funded technologies to Phase III using incentives and other forms of assistance.
- Enhance connectivity among SBIR firms, large defense contractors and Navy R&D and acquisition communities.
- Improve SBIR firms' capability to provide technology to DoD military services
- Establish success metrics, track and report CPP process actions and results

During 2006, Navy CPP disbursed to NAVAIR and NAVSEA 100% of CPP funds for direct assistance to CPP projects. Other funds were committed to Navy-wide CPP initiatives, including a special SAT (technology acceleration) fund to incentivize key transition stream players. As a result, the Navy's 2006 CPP report noted a total of 32 SBIR Phase II projects advanced as candidates for CPP assistance, exclusive of SAT candidates - projects supported by Command program offices with the potential to rapidly transition through Phase III into Programs of Record. Review criteria included high priority operational need, program office support, realistic transition capability, and other factors.
(http://www.navysbir.com/navy_CPP.htm retrieved 5 April 2011)

Navy Phase II.5 Structure and CPP

Overview:

The Commercialization Pilot Program (CPP) was authorized and created as part of section 252 of the National Defense Authorization Act of Fiscal Year 2006. The statute set-aside is 1% of the available SBIR funding to be used for administrative support to accelerate transition of SBIR developed technologies. The funds support the SYSCOMs in administering the Phase II.5 and provide non-financial resources for the firms (i.e. the Navy's Transition Assistance Program, etc.)

Per Chief of Naval Research memorandum, 20% of SYSCOM SBIR funds are dedicated to expand transition funding to further develop SBIR technologies and to accelerate transition for existing Phase II projects. This process is called the Phase II.5. and highlights the Navy's commitment to technology transition.

Eligibility for Phase II.5:

Firms must meet Phase II eligibility requirements (size, ownership, % of work performed etc.) to be considered for Phase II.5.In order to participate in Phase II.5, firms must be invited and selected by a Navy SYSCOM Transition manager. The project must address a Navy need. Project relevance to a planned or existing Program of Record (PoR) or identified Technology Gap should be documented in a Technology Transition Plan (TTP), a Technology Transition Agreement (TTA) or other agreement designated by the SYSCOM.

Depending on the SYSCOM and the timeframe, a Technology Transition Agreement (TTA) or Technology Transition Plan (TTP) may be required for Phase II.5. The technology being developed must show a clear path to transition as evidenced by acquisition office or PoR/FNC/INP support.The time to transition (i.e. inclusion in the PoR/FNC/INP acquisition strategy) must not exceed 48 months from the start of the II.5.

Contracting:

Phase II awards exceeding $1M or periods of performance greater than twenty-four months per topic/per firm should be segregated as optional efforts, expansions or second phase IIs and would become a Phase II.5.

Cost matching funds from Government sources can be placed on the phase II.5 award or, preferably, when practical, on a separate phase III award. A phase III award (non-SBIR funds) can be made at any time following a phase I award, a phase II.5 is not required for a phase III.

Non-government cost matching shall not be considered as cost share and will not be included in the contract amounts. The failure to meet cost matching commitments is a failure to meet the technical requirements for demonstrating continued transition

commitment on the part of project sponsors. This is sufficient justification to restrict further SBIR funding of the project.

Each SYSCOM has their own procedure and criteria for the selection of Phase II.5 projects.

(http://www.navysbir.com/phaseII5andcpp.htm retrieved 5 April 2011)

Air Force CPP

The Air Force has implemented a new, strategically driven process that directly links Program Executive Officer's representatives to Air Force Research Laboratory Technical Points of Contact (TPOCs) to generate topics that are of high interest to Air Force product centers. Successful implementation of this process occurred during FY06 & FY07. This technology-based needs-gathering process is ongoing. It translates the product center technology needs to SBIR topics using CPP "Transition Agents." Topic development now uses a focusing strategy resulting in optimal use of SBIR funds.

A second approach matches up product center prime/supply chain contractors with companies that are working a DoD SBIR Phase II in areas relevant to the product center's technology needs.

- Industry selects small businesses to interview from data mined SBIR Phase II projects
- These companies are invited to participate in an Air Force / Industry Technology Interchange Workshop
- Following the workshop, transition agents contact participating prime/supply chain contractors to identify which small businesses share areas of mutual interest and are a potential partner.
- Transition agents re-engage with the corresponding product center that initiated the need and the TPOC that manages the SBIR project upon confirming a new teaming arrangement.
- All stakeholders enter into an agreement titled the SBIR Technology Transition Plan (STTP). The STTP identifies the roles and responsibilities of the stakeholders as well as assistance required by the small business to achieve a Phase III project.

(http://www.afsbirsttr.com/CommercializationPilotProgram/default.aspx retrieved 5 April 2011)

Missile Defense Agency

MDA has several programs in place to achieve the desired program goal of accelerating transition of technologies, products and services into systems being developed, acquired and maintained for the warfighter. The Technology Applications Program, administered by the National Technology Transfer Center (NTTC), assists many small U.S. businesses and universities to commercialize their MDA-funded technology, including SBIR/STTR projects.

MDA has a rigorous process to generate topics and select SBIRISTTR awards in support of the Ballistic Missile Defense System (BMDS). MDA also has a Transition (phase II Enhancement) Program through which additional SBIR funding is added to Phase II technology development programs identified as having the highest potential for transition to enhance ballistic missile defense capability. As MDA formulates its plans for a formal CPP, these programs will likely be expanded and will continue to leverage all available technology development and transition tools.

(pg. 13, FY07 SBIR CPP Report to Congress, DoD Office of the Under Secretary of Defense (Acquisition, Technology, & Logistics) Office of Small Business Programs, February 2008)

The Joint Science & Technology Office for Chemical and Biological Defense (JSTO·CBD)

The JSTO-CBD SBIR Program is a unique joint Services program. JSTO-CBD plans to leverage Army CPP support contractor efforts to identify CBD SBIR Phase II projects possessing key interest to the Army, in its Chemical and Biological Defense Program Executive Agent role, and with a high probability of rapidly transitioning to operational Army units and the commercial marketplace.

(pg.13, FY07 SBIR CPP Report to Congress, DoD Office of the Under Secretary of Defense (Acquisition, Technology, & Logistics) Office of Small Business Programs, February 2008)

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